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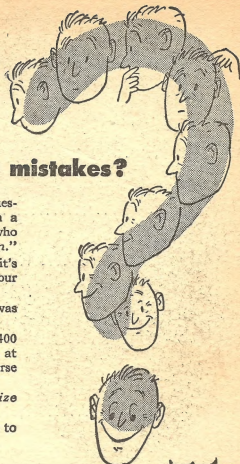
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AUGUST, 1951

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SAM MERWIN, JR., Editor

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EDITING a science fiction magazine is very much like walking a narrow and treacherous path atop a wall dividing two sheer precipices. At their foot, on the one side, lurks a pack of horrendously articulate and ferocious fans, waiting to snap and snarl at every slightest deviation from what each of them considers the classic norm.

On the other, coiled and hissing, the science experts lie in wait, striking at every possible technical flaw the editor allows in print.

The wall which supports the narrow path the editor must tread is composed of the mass of general readers—or more simply the circulation figures. If the wall falls away the editor lands in both abysses to be torn apart in a savage tug-of-war. If it rises too high he tends to lose all contact with the only entertainment potential his readers can offer.

So the editor not only has to stay on the path—he must see to it that there is a path upon which he can tread.

Writers and Readers

All of which is merely by way of leading up to the fact that, in the course of seven-odd years of doing this near-tightrope performance, we have come to some definite conclusions about science fiction stories—although we lay no claim to any definitive conclusions about science fiction itself.

Like all editors, from the lowliest small-town weekly to the toniest avant garde belle lettres feuilleton, we are dependent upon our writers to deliver us readable stories and upon our readers to read them. And like all editors of any integrity we must rely further upon our own taste, experience and personality to fuse writer and reader into something of an individual entity with a personality of its collective own.

Both writer and reader deserve all the con-

sideration we can give them without sacrificing whatever catalytic effect we ourselves may have. And it is with this in mind that we want to examine carefully some very definite traps that seem to us constantly to lie in wait for both.

The Gadget Trap

One of these we shall call, for want of a better term, the gadget trap. All too often author and purchaser alike are at fault in this instance. The author comes up with some ingenious inversion of scientific law or theory and promptly pens a yarn upon it, a yarn in which all primary considerations of story remain secondary to his gimmick if they are allowed to exist at all. And a large mass of readers, caught in the same net of sheer ingenuity, lift their toupees in loud huzzahs. Editor ditto.

Fortunately this mass of toupée-wearers, however noisy they may be, are never in the majority—because most people don't give much of a hoot about gadget stories either way. But this the editor must learn by himself because most people don't write in to tell him their likes or dislikes. They simply keep on buying the magazine or they quit in disgust. They want emotion, not tricks.

Then there is the politics trap, one which, thanks in large part to the heated condition of most thinking people's feelings in the present world situation, we are seeing all too frequently of late. Too many writers are attempting to prognosticate the future of humanity via science fiction according to their own hopes, fears and limited knowledge and experience.

The Curtain of Make-Believe

There is a hallowed tradition behind them of some thousands of years. For whenever an

(Continued on page 137)

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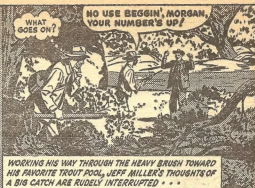
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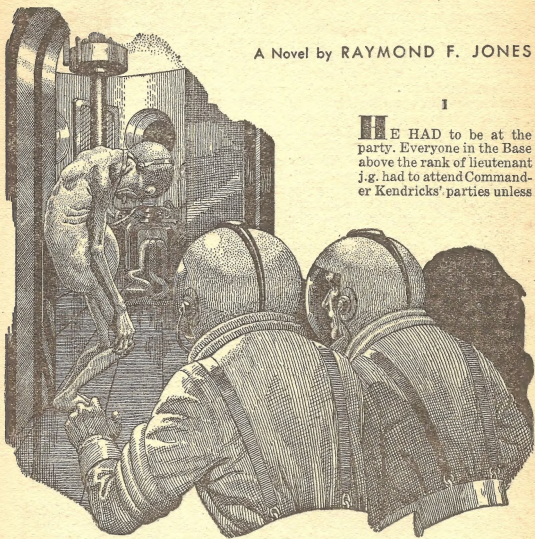


*The damaged ship carried the secret of intergalactic drive, but
if humanity learned it thousands of worlds would die*

A Novel by RAYMOND F. JONES

I

HE HAD to be at the party. Everyone in the Base above the rank of lieutenant j.g. had to attend Commander Kendrick's parties unless



ALARM REACTION

sick or on duty. But no one could force him to have a good time and Glenn Baird was damned if he'd make the attempt on his own.

He saw Nancy coming toward him and sauntered out through the wide glass doors into the garden. He still had a cocktail glass in his hand where it had been for the last half hour. He had never yet been able to get rid of one decently at Kendricks'.

Now he gave this one a hasty toss into the thick foliage beside the door and moved on to a garden seat in a secluded nook. He could imagine how Caroline Kendricks had coyly designed this for a lovers' rendezvous. Maybe he was getting old, he reflected, or perhaps his trousers were just worn thin in back but that cement slab was damned cold for romance.

Of one thing he was certain—it was not that being married to the same woman for almost six years had taken it out of him. Nancy, coming toward him with the moonlight behind her, was easily good for a tenpoint jump in his blood pressure.

She sat down close to him. "What's the matter, Glenn? Aren't you having a good time?"

"Oh, cut it out, Nan. Has Kendricks got to the jump he made at ninety thousand feet on his first round-the-world nonstop attempt?"

"No, darling." Nancy laughed. "He's only to the one about swimming fourteen miles through the crocodile-infested waters of—"

"That means he's on his sixth cocktail. Two more and he'll be so fuzzy we can go home. Be a good girl and go in and keep score for me."

SHE moved suddenly and sat on his lap. "Seat's cold," she said. Her white arms lay on his shoulders and he could smell the clean fragrance of her flesh, unobscured by the heavy fashionable perfumes that made the room inside as oppressive as a tropical greenhouse.

"Are you sure you shouldn't stay?" she said. "These parties are just as important as good work at the Base in getting ahead. I'm learning Navy awfully fast, darling. You've got to be Kendricks' kind of man to get ahead here."

"Then I'll stay right where I am," Glenn said bitterly. "I'll see the whole Navy go to hell before I'll be John Kendricks' kind of man."

Intergalactic Man

MOST of us in any way concerned with science fiction have at times wondered just how far advanced our species will have to be to make successful contact with the alien species that may inhabit other planets of other stars. Knowing how persistently the old cave-man theory that every stranger is an enemy remains in the so-called enlightened era, it has occurred to us that interplanetary and interstellar expansion, coming too early, might mean little more than a ghastly expansion of human wars and conquests.

On the other hand, such able thinkers as H. G. Wells and Olaf Stapledon have considered the possibility of humanity developing not only physically but spiritually and ethically to deal intelligently with extra-tellurian species. Both of them seem at times to have found hope for some sort of forced evolution that would drag us out of our self-made kennel residences.

But evolution, forced or otherwise, is a mighty slow process when measured by the brief flicker of the human life-span. Over the years, the centuries, even the millennia, people don't seem to change much. In the days of ancient Egypt or China they were doing pretty much the same things they do today and for the same motives.

On the other hand, a species that has produced and given recognition to a Confucius, a Buddha, a Christ, a Gandhi, a Marcus Aurelius and an Einstein can hardly be all bad—a fact which Mr. Jones points out brilliantly in this novelet of intergalactic contact right here on Earth. Captain Baird and his Nancy, Lieutenant Prentiss, Dr. Gibbs and even Commander Kendricks are all very human indeed. As such they are simultaneously sublime and horrible when faced with an enormous crisis. And as such they are entirely understandable to all of us.

—THE EDITOR.

"It's only a step on your way up—but Kendricks can keep you in it for the rest of your life if you don't play things just a little his way. Being nice at his parties doesn't take much out of you."

Nancy slid to her feet as Glenn stood up. "You'll never know," he said. "You'll never really know how much it takes out of me—hanging around for two or three hours while Kendricks spouts off and all the kid lieutenants and their giggly wives cluster around. It takes one hell of a lot out of a man."

"Then let's leave it, Glenn! We don't have to stay. If it isn't turning out to be what you hoped for let's put in for a transfer from Pacific Base! I don't care where they send us as long as we can stay together and be happy. Let's go to Ceres again if that will make you happy."

She clung tightly to his arm as they moved toward the noise and smoke and sticky lighting of the house. He smiled down at her small, earnest face, the moonlight full upon it. He bent down and kissed her quickly before they came into view of the doorway.

"No, I won't take you back to Ceres." They had spent the first two years of their marriage there—then almost four years on the Moon. He had promised himself he would never take her away from civilization again.

"It was kind of fun out there," said Nancy. "Only of course there's Jimmy now and school—"

"Sure, we've got a family to look after. We won't go to Ceres—or any other place like it. I'm not running away from Kendricks. That would be just what he'd like. Then he could put his son-in-law in my place and maybe make it stick this time. Anyway I'm old fashioned enough to believe that you can get somewhere by honest effort—even in a military organization."

"Oh, darling, then you *are* old fashioned! I've learned more about the Navy in three months at Pacific Base than you have in your whole ten-year career."

He wished she wouldn't talk like that.



CAPTAIN GLENN BAIRD

—who is forced to risk his Space Navy career in order to save an alien species from hideous destruction

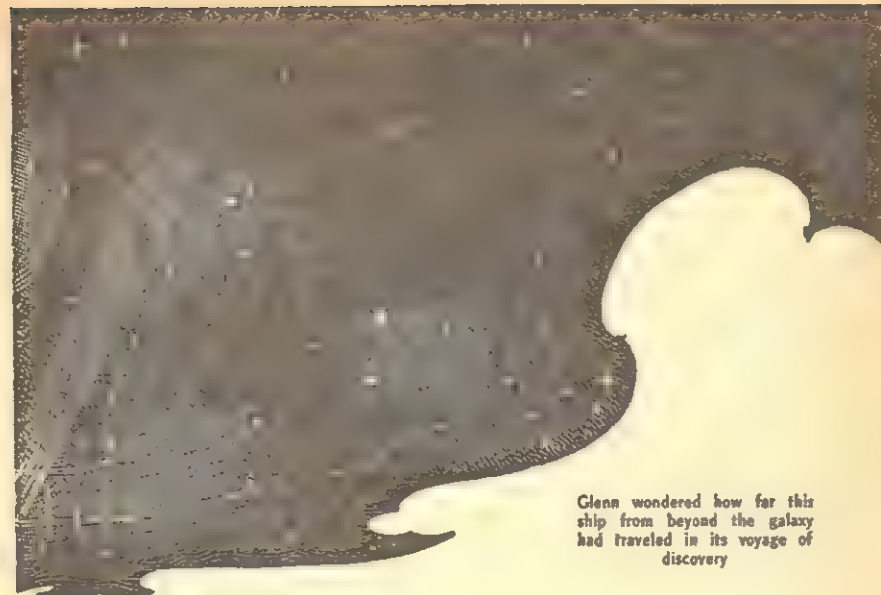
She said it only because she actually *didn't* understand the petty deadly intrigue of Navy officialdom. It bothered him more than if she had been one of the clever old-in-service Navy wives who used rank like a rapier.

Nancy had never known what home base life was until now. Glenn had seen plenty of it before they were married. He'd tried to explain the difference between Pacific Base and the other places they'd been. But she didn't know what he was talking about.

She didn't know about rank. She didn't know that home base wives flaunted rank like any land-locked Admiral. She couldn't understand that it wasn't like Ceres, where the Commander's wife had midwived the birth of Jimmy when the base surgeon and every assistant were called away because a lock port blew during a cruiser take-off.

Nancy didn't understand how absurd it was for her to offer to care for the Kendricks' youngest during the Commander's three-week vacation—an ex-





Glenn wondered how far this ship from beyond the galaxy had traveled in its voyage of discovery

clusive camp had been planned for him.

That was when they first came to the Base and some of the women finally explained with kindness some of these details when they saw that Nancy was merely innocent of intrigue, that her naive behavior was not some clever campaign to beat their game.

So Nancy thought she understood now. But she didn't. She still didn't understand that it was more than some stupid kind of play acting, a feminine counterpart of military foppery. She could not comprehend how utterly serious, how completely deadly, was the little tight society of Pacific Base.

And so she came up with bizarre remarks such as saying that Glenn was old fashioned for believing that hard work alone would win advancement. Bizarre—like a child having come upon a glittering dagger, fascinated by its brilliance, not knowing its proper use.

CAROLINE KENDRICKS fluttered up as they came to the doorway. "I should have known where you two

would be," she said with sly insinuation that made Glenn shudder. "Anyone would think you were just engaged. But, Captain—Commander Kendricks has been looking for you. Something very urgent at the Base, it seems. He'll see you in the library."

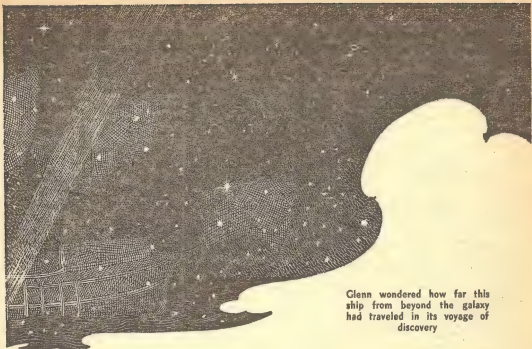
Glenn frowned. He gave Nancy's hand a squeeze and moved away. "Excuse me, darling. I'll see what it is."

The "library" was a small office in the front of the house, where Commander Kendricks kept a desk and a telephone. On the walls were paintings of the space-ships he had commanded. On the desk were six or eight volumes of Navy Regulations. These constituted the library.

Glenn knocked and was ordered in. "Mrs. Kendricks said you were looking for me."

The Commander nodded, managing to convey an implication of displeasure that Glenn had not been at his side the moment he was needed.

There was no sign of liquor in Kendricks' face now. He wore his normal



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There was no sign of liquor in Kendricks' face now. He wore his normal

space tan and his hands and eyes were steady. Glenn had the impression that he always ordered uniforms a trifle small to emphasize his own great bulk. Now he sat stiffly behind the desk as if momentous happenings were beneath his jurisdiction.

"Central Headquarters just notified Base that a stranger in distress is on the way in," said Kendricks. "She's not a member of the Galactic Council but has references from Paramides. She asks use of our repair facilities. Central gave permission. I've notified Base. You will report there at once and see that proper facilities are provided."

"Yes, sir. When is she due in?"

Kendricks made no answer. His round hard face remained set. In such a pose the lines began to show in definite depth.

"Is that all you have to say, Captain? 'When is she due in?' Is that the only chord of response this information strikes in you?"

Glenn flushed. He had grown used to baitings these past three months—sometimes he felt capable of anticipating them. But the suppressed rebellion against the unwritten law that required his presence at the party, the inescapable inanity of small talk he had heard ten thousand times before—these had shut off all rational processes in his mind tonight.

"I beg your pardon, sir," he said evenly. "I understood your information to be that a stranger in distress has been granted haven, that—"

And then he had it. Knew what cue he had missed.

"We will, of course, alert every member of the Analysis Crew to the possibility of a Fourth Order drive," he finished lamely.

"I trust so—I trust so. You have not been with us very long, Captain. Perhaps you cannot be expected to understand the importance of this prime objective. It may underline it for you if I point out that the *only* reason for allowing a completely unidentified stranger into this base is the possibility of subsequently finding ourselves in pos-

session of a Fourth Order drive. Do you understand that clearly?"

"Yes, sir."

"It remains to be seen." Kendricks glanced at the six dialed chronometer on his wrist. "Half an hour at the most. He was in the thirty-thousand-mile orbit when Central called. You'll have to hurry."

Glenn saluted and turned to the door.

"I notified Dr. Gibbs, also," said Kendricks. "You'll likely need him. The stranger indicated illness aboard but not the extent. He could communicate only by Galactic Code obtained at Paramides."

"Yes, sir."

II

IN THE way to the car with Nancy Glenn felt the cool wash of ocean breezes upon his face. He inhaled deeply to get the scent of stale heavy perfume and liquor vapor out of his lungs.

"I wish I could get away with the things Doc Gibbs does," he said. "Doc is worth his weight in champagne at a party but he thumbs his nose at Kendricks by staying away."

"You can—when you get to a position like Gibbs. That's the privilege of rank, thumbing your nose at men like Kendricks. Until then you have to be nice at stupid parties. *That's Navy.*"

"It's not Nancy Baird," said Glenn seriously. "You didn't talk like that before you came to Pacific Base."

"I told you I had learned more Navy in three months than you had in ten years."

Glenn got in the car beside her. His resentment against her unnatural cynicism mingled with the little raging fires that Kendricks could so carefully ignite within him. But, as he drove away, these both succumbed to the immense and secret pleasure that came with anticipation of the job ahead.

It was for this and almost for this alone that he had come to Pacific Base. When word of transfer had come his exultation had not been for getting

Nancy home, not for getting Jimmy to a civilized school—at least not in the first few hundredths of a second.

Even on Moon Base they had talked of the frantic work going on at Pacific to acquire a Fourth Order drive. The theoretical physicists had proven beyond doubt that Fourth Order was feasible—but they couldn't tell the engineers how to build one.

But somewhere in the immensity of the Universe there would inevitably be a race who knew Fourth Order drives. It fired an imagination and a yearning Glenn could not ignore. The one place at which it might be contacted would be Pacific Base. For that hope he had come. For that single hope he would stay—and take anything that Kendricks could dish out. Kendricks and his son-in-law, Lieutenant Prentiss, whom Central had by-passed in picking Glenn.

He took the beach road. Although it was heavy with traffic even at this time of night it was the shortest route to the great naval base five miles away. There, as Chief of Technical Operations, Glenn would direct the berthing and accommodations of this stranger from far worlds—and direct negotiations for technical exchanges.

To walk through a hull fabricated a hundred-million light years away, to touch its machinery, to put tools to it, to set it functioning again—that was worth all the indignities Kendricks and military fops like him could throw in his way.

"I'll probably be the rest of the night," he said to Nancy. "You take the car on home. I'll give you a call in the morning and let you know what's next."

"Oh, no! The last time something like this happened you didn't show up for three days. I'm staying right with you until you get things organized. Then we're going home and get some sleep."

He looked out over the sea where breakers rolled slowly under the white moon, their white caps frantically unravelling. Then he sucked in his breath sharply and pulled the car over to the shoulder of the highway.

"What's the matter?" said Nancy.

He bent close to the windshield to look upward. "Up there," he whispered.

Nancy saw it then. In the sky ahead of them a cluttered shadow moved slowly against the stars. Tiny, but they could make out two spheres and a snub cylinder whose great bulk could be estimated even at this distance. Navy tractors were towing the stranger, whose power was cut because its pilot could not know the field.

"How far has it come?" Nancy whispered. She understood the awe in Glenn and felt it too as if by reflection from him.

"Don't know but we've got almost everything tagged within a hundred-million light years. It's probably from farther away than that."

Beside them cars roared on the highway. Laughter from moonlight beach parties was carried up on the winds. The sea rolled in as it had done for a billion years on this and other shores. And there was an ache in Glenn Baird's throat as he contemplated awesome times and distances while he watched the shadows in the sky disappear behind a glowing cloud.

"You'd better hurry," suggested Nancy.

"We've got time. It'll still take a half hour to get the ship down at the field." But Glenn started off, edging into the line of traffic.

THE approaches to the Base were choked with cars. Every late driving citizen within fifty miles must have glimpsed the ship and guessed what it was, Glenn thought. He signaled a police officer at the approach to the Base and flashed his Navy insignia. The officer held back the lines of snarling cars while he sped through.

On the field daylight flamed from a thousand glaring beams. A circle of intense brilliance marked a spot before one of the great shops where the ship would be landed. Glenn jerked the car to a stop behind the Analysis Building and ran toward his own offices, dragging

Nancy by the hand.

Assistant Chief of Technical Operations Walter Prentiss was on evening duty. He sat before a battery of phones, replacing one as Glenn entered. His face was as expressionless as a computing machine panel.

"Anything of emergency class?" demanded Glenn.

Prentiss shook his head. "Operation is proceeding. Analyzer crew alerted and standing by. Environmental data complete." He tossed a slip of paper across the desk, bearing the latter information. "In fact," he added carelessly, "you might just as well have stayed at the party. Everything is perfectly routine."

Glenn kept his eyes on the paper he'd picked up from the desk. He read as if wholly absorbed in the data concerning the kind of atmospheric conditions carried by the stranger ship. But he didn't miss Prentiss' casual words.

Walter Prentiss had expected the promotion to CSTO, the job Glenn now held. And his expectation was warranted. He was competent. He had a mind like a machine. And he was old in the ways of nepotism. He had a good mentor in his father-in-law, Commander Kendricks.

IT HAD hit him and Kendricks hard when Central had by-passed him in replacing the Technical Chief for Pacific Base. But Glenn's own record had some very bright spots on it, and these had won him the post.

Prentiss had not given up yet, however—Glenn knew this for certain. And Kendricks never would. The rejection of his recommendation was a blow for which he would always hold Glenn personally responsible.

Glenn forced these snarling thoughts out of his mind. There was a job to do tonight, a big job—maybe a Fourth Order job. "Ambulance standing by?" he said.

Prentiss nodded. "Gibbs is out front preparing it to these atmosphere specifications."

"Get four suits ready then. You and I will make the entry. Gibbs will go along. Who's heading the Analyzer Crew?"

"Martin."

"Him too then. Let's go."

The tractors were bringing the huge vessel in over the sea approach. It hung a thousand feet in the air, vertical now, landing vanes extending downward. A great spotlight picked it up, glinting on the vast faintly-scarred hull. From the thousands of cars parked about the horizons of the field came a raucous bellow of welcome and exuberance.

Glenn swore in annoyance at the distant racket. He was thankful for the ban on private flying within a ten-mile radius of Base or there would have been as many ships in the air as there were cars on the ground.

He moved across the hall to the communications room, Nancy following closely. The communicators were in contact with the towing ships and with the stranger itself. The latter was severely restricted to the basic Galactic Code, which had been picked up at Parmides.

Glenn stepped to the Code operator. "Tell them we'll be ready to open the lock upon landing. We'll make immediate entry with cyberlogue equipment."

"I'm afraid they won't understand the cyberlogue reference, sir."

"Of course they won't! But give them the general idea that we will talk to them. Have they reported an understanding of lock sterilization?"

"Yes, they have already performed that operation, they said. They understand the necessity of not introducing alien germ life to our planet."

"Good. Get them to open that lock then. That's the most important thing."

Nancy trailed with him to the shop building. There he stopped her. "This is as far as you go. I wish you'd take the car on home."

"I'll wait. It won't be three days this time." She smiled confidently.

"It might be."

NEAR the spot of light that was the target for the landing tugs he found Dr. Gibbs. The director of Base hospital was placidly sucking a long cigar that flared in regular intervals in a glare of light. He stood beside the huge double-trucked van that was his ambulance. In it could be duplicated the atmospheres of any of ten thousand worlds. Now his technicians were busily setting it for the conditions required by the stranger.

"Gibbs!" exclaimed Glenn. "Come on. You're coming aboard with us."

The doctor moved slowly, taking time to drop his cigar carefully and put out the ashes. "Such excitement," he murmured. "Everybody so anxious to give our friend up there a hand—and jam it in his pocket when his back is turned. I'm a medical man. I don't want any part of highway robbery."

"What's eating you, Doc?" Glenn said irritably.

Gibbs never leaned on rank. He could be addressed like a human being. He came towards Glenn in leisurely resignation. "Everybody so anxious to rob the poor suckers of their Fourth Order drive—if they've got one."

"Nobody's going to rob anybody. We'll negotiate for anything we can use of theirs."

"Negotiate!" Gibbs chuckled. "That means wrapping the club in a piece of silk before you hit a guy with it."

Glenn put an arm around Gibbs' shoulders and hurried the older man toward the dressing room. Prentiss and

Martin were already there. Shortly all four were dressed in lightweight space garb which would make possible entry into the alien ship.

The strangers were oxygen breathers, they had indicated in Code. They used it, however, at three Earth atmospheres pressure and included trace compounds such as hydrogen cyanide. In addition their air temperature was around a hundred and fifty-eight degrees with ninety percent humidity. A human being could not survive long in such environment without a suit.

Mechanically, they checked intercom equipment with each other and read off meter indications of air temperatures and pressures. Then they marched out to the apron in front of the shop.

Nancy was back against the wall of the building with the group of mechanics, technicians and engineers. Glenn wished he had insisted on her leaving. But it was too late now and he couldn't have made her go anyway.

Sometimes there were accidents, Glenn reflected. His head bent back, looking up at that great glistening piston sliding carefully out of the sky. Sometimes a tractor slipped and a hull toppled. Sometimes a power plant...

There was the force of hydrogen bombs locked within that alien hull. But it didn't do any good to think of these things. Ordinarily he didn't. It was just that he wished Nancy was home.

He could see the great landing vanes

[Turn page]

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oscillating slowly. Their lower edges were less than twenty meters above the field now and the tractor operators were jockeying carefully over that target of light. The gunmetal sheen of the vessel seemed to swell in frightening proportions as it inched downward. Glenn considered the landing apron. There was six feet of reinforced concrete overlaying a massive rock foundation but the entire mass of the ship would be focussed upon the three points where the landing vanes touched.

The thing was at least five hundred meters high, he thought, and a fifth that in diameter. So slowly was it descending that there was a moment's illusion of its hanging suspended and drawing the Earth up to it by the great gravity of its mass.

Then abruptly there came a subdued sound in the Earth like the faroff *whoom* of an immense bomb. The stranger had touched.

III

SAI D Glenn, "Let's go." His voice sounded harsh to his own ears as if he had broken a spell.

He shouldered the pack straps of the cyberlogue equipment and led the way toward the ship. There was no sign yet of an entrance but he knew where it would be found. He had glimpsed a ladder against the expanse of one of the vanes. Its rungs looked as small as matchwood from a distance but as the men approached, it was seen that the span of the rungs was almost right for a man.

That was good. It meant beings that climbed and walked like humans. It could have been much different. Some strangers were so grotesquely proportioned that it was virtually impossible for a man to work within their ships.

Glenn put a gloved hand to the first rung which was at head height. The cyberlogue heavy on his back, he swung himself up, hand over hand, then started climbing. One by one Prentiss, Gibbs, and Martin followed. The searchlight

caught their transparent helmets and set them glowing. To the hundreds of watchers it looked as if a crazily disjointed glowworm were inching its way up that massive vane.

Glenn paused for breath when he reached the level of the shop roof twenty meters above the floor. The vane had scarcely begun to taper and the reaction ports between the junction of the three vanes was that much farther above him.

He climbed again at a breath-conserving pace. His eyes scanned the surface of the meteor-pocked metal. None of the pocks was more than a millimeter deep. The stuff was good, he thought in admiration. As good as any in the Galaxies of the Council.

The end of the ladder appeared and there a deeper shadow yawned in the dark metal. The door of the airlock had been swung inward.

His heart beat faster. He couldn't help it. It was like when he was a kid and his father took him down to the Navy yard for the first time to see a ship from outside the home Galaxy. The scope of vast distance separating the creatures of the universe, the power of their minds to bridge such space . . .

Every time it was the same. It made his throat ache with awe.

How far had this ship come? The light of its star, now reaching Earth, had started across space before sentient man appeared on this planet. But the stranger had outstripped the light of its own sun several millionfold.

Now they were here and dependent upon man for succor. Sick, they had said, and their ship in disrepair.

Glenn hoisted himself into the lock with the assistance of handrails. He turned and helped his companions as they appeared above the level of the lock floor. Lights glowed in the ceiling of the chamber.

They turned and surveyed the surrounding walls in silence. Glenn wondered how they felt at such a moment as this. Prentiss, he knew, regarded the ship as an entity by itself. He admired or criticized a mechanism without re-

gard to the minds of the creators. For him there existed only science—with-out the scientist.

Martin was a gadgeteer—a very good one or he would not be heading up the Analysis crew. He was fascinated by mechanisms, absorbed in their cleverness. It mattered not at all whether they were the optimum or what kind of mind devised them.

Gibbs was of wholly different cast. He came closest to understanding the things Glenn felt as he walked the deck of this stranger. But Gibbs had no delight in mechanisms of metal and glass. He was awed only by the variant means through which Nature had adapted sentient life to the universe—and the sometimes unbelievable similarity of such life in far-removed corners of creation.

Glenn wheeled the lock door shut after examining its mechanism for a moment to be sure he could open it again.

They waited expectantly. The chamber of the ship should begin to fill automatically with the atmosphere in the mail huff sections, provided the mechanism of the stranger permitted any extrapolation at all. They were not wrong. In a moment there came the hiss of in-rushing air.

The opposite door opened, giving view of a second lock, a duplicate of the one they were in. But they were still alone.

"Where's the welcoming committee?" said Martin. "This is no way to treat a friend."

THE air began to fill suddenly with an opaque fog that swiftly cut their vision. Automatically they locked arms with one another as long training demanded. "What do you think?" said Dr. Gibbs.

"Your department," said Glenn. "Sterilizing us and the chamber before letting us in, just as we would do in similar circumstances."

"I was hoping that was it. A very intelligent class of life."

The vapor faded slowly. With its passing they saw that a door leading to

the main interior of the ship had been opened. Within that opening stood one of the strangers.

For a long moment the two species of life regarded one another. The stranger was roughly anthropomorphic. He was grotesquely pot-bellied and very thin in all of his four limbs. His bones seemed sharply outlined as if there were great skeletal strength without corresponding muscular development. The totally hairless body was covered with a skin that resembled fine ivory-tinted leather. He wore no clothing or ornament.

Glenn advanced slowly and cautiously, taking care not to make any overt move that could be misinterpreted as hostile. He slung the cyberlogue equipment from his shoulders and set it down. He took a cord from it and plugged into an outlet on the chest panel of his suit. Then he took from the case a small adjustable communication set and handed it to the stranger.

The latter grasped it and turned it over in his hands for a moment. Then he seemed to nod in a gesture of excitement and clamped it carefully to his head so that the tiny speaker was over his diminutive ear canal. The nut-sized mouthpiece was close to the leathery lips.

Glenn spoke. "I am Glenn Baird. We welcome you to this galaxy and this sun and its planets. We offer you sanctuary."

The stranger's face lighted as the instrument at Glenn's feet translated the words into basic semantics, from which the stranger's own mind could devise meaning.

"I am Emdor," he said at once. "On Paramides they talked to us with such equipment as this and said that men of Earth had made it. They said that here we could find all we need to set our ship in order again."

The voice came mechanically, transcribed by the instrument. All of them could hear through the relay function of Glenn's intercom set.

"I accept your good will with thanks

on behalf of my people," Emdor continued. "We are the Centrasi from far beyond your galaxy cluster. But I fear that we have come too late. There is no salvation for us and my companions are already far beyond any assistance."

"You are ill?"

"Yes. Already two have died."

"Are you—?"

"Let me," Gibbs interrupted. "Time is important now."

To Emdor he said, "Is it an illness with which you are familiar or something strange you may have contracted in your travels?"

"It is a new and strange thing. Nothing such as we have known before."

The men could sense now, even through the mechanical voice of the cyberlogue, the weakness and difficulty with which Emdor was speaking.

"How many are there aboard?" said Gibbs quickly.

"Six remaining—"

"Six! We expected hundreds in such a ship!"

"No. It requires only a small crew. There were only eight of us to begin the journey."

"Where do you come from?" Prentiss demanded abruptly.

"From—I can't express it clearly to you—it would be from behind space, I might say."

"Please!" Gibbs snapped. "This is a case for medical precedence." To Emdor he went on, "This illness—have you narrowed it down to any reasonable limits through past experience? Have you any treatment that alleviates?"

"None whatever. It is wholly beyond our previous experience and knowledge."

"You have been gracious and kind to permit us to come here. Now I would ask one final favor. It is too late to accomplish what we had hoped. Even as our ship came into your field I hoped there would yet be time for you to attempt repairs for us but now there is none."

"This final favor—accept our thanks and take your departure. We will take our ship away again. We can lift on

primary power, pointing towards our home world. It will be many thousands of lifetimes before our corpses are found but in time they will come to rest upon our own soil. This is all we ask of you."

ABRUPTLY Emdor's eyes closed and he collapsed in the doorway.

"Find their suits!" ordered Gibbs. "Locate the other five Centrasi. Dress them all up and find some way down without carrying them down that ladder. There's got to be an elevator or freight hoist of some kind."

Glenn accepted the natural orders of Dr. Gibbs in the emergency. They made Emdor as comfortable as possible, then moved on down the corridor, searching carefully. They quickly found the locker of space-suits. Martin and Prentiss were left to dress the Centrasi and find an elevator or hoist to the ground level.

Glenn and Gibbs moved on toward the interior of the ship. Side doors along the corridor showed a score of tempting byways but they seemed to be in a hallway of central importance and continued. At the end they found an elevator which apparently traversed the length of the ship.

They entered. Glenn studied the controls for a moment. They were simple enough to him, who had made a career of working with alien mechanisms, but to Gibbs they looked like a miniature powerhouse switchboard.

The small transparent capsule of the car rose slowly as Glenn touched the controls. They rose past deck after deck crammed with mechanisms. Even those brief glimpses told Glenn he had never seen anything in all his life so vast and complex. If the Centrasi were too ill to assist with the analysis or give information about the ship it would take hundreds of thousands of man-hours to analyze this structure and repair it.

It would be done, of course. The Navy would not rest until the last bit of connecting wire had been tagged and the working of the whole great engine determined to the final detail. But it would not be out of love for the Centrasi. The

creatures would be long dead by then unless Gibbs found a cure for them.

The analysis would be made on the million-to-one chance that this might be the long-sought Fourth Order drive.

The car rose faster as Glenn accelerated past endless decks without observing signs of life or evidence of the control room. He supposed finally that it would be found in the nose of the ship at the highest level.

It was.

The elevator halted automatically. The men stepped out to the deck of the control room. A lighted screen before the pilot's position showed the entire field as viewed from the five-hundred-meter height of the ship's nose. The shapes, the lights, the distant swarms of curious onlookers—all were there on the screen. Even the tiny knot of people with whom Nancy stood. Glenn tried to pick out her face on the screen but he couldn't be sure at that distance.

He turned quickly away to the more

important business. There were no signs of Emdor's companions. "Look for the crew's quarters," he said. "You could expect them on the level below or even on this one, since there were so few of them."

"Over here," said Gibbs quickly from the other side of the room. He beckoned and pointed through a doorway.

The five Centrasi were sprawled on low cushioned beds in attitudes of collapse. Gibbs stepped forward impulsively.

Glenn caught his arm. "Take it easy. Watch for weapons. If one of them should come to he might come out fighting, not recognizing who we are."

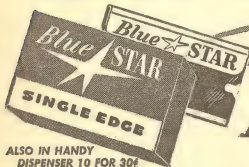
Gibbs nodded and they approached the first bunk cautiously. There was no sign of life. Carefully they picked up the Centrasi and carried him to the elevator. It was scarcely large enough to permit laying the creature on the floor. No more than three of them could be taken at once.

[Turn page]

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"You go on," suggested Gibbs. "Prentiss can be getting them into suits while we're bringing out the next two."

At full speed the elevator was sickeningly swift in its fall. Belatedly Glenn considered the effect upon his charges but it seemed to him that nothing they did now would make any difference to the dying Centrasi.

Prentiss and Martin had Emdor dressed in the suit when Glenn reached their level. "We located another hatch," he said. There is an elevator all the way to the bottom of the vane but no airlock down there. The interior of the vane can be sealed off so we can let our atmosphere into it and consider letting out the ship's atmosphere at a later time."

"Good," said Glenn. "I'll be right back with Doc Gibbs and the other two. Then we'll call it a night."

The five Centrasi remained unconscious during the removal to the ambulance. Gibbs supervised his medical technicians as they transferred the strangers. The ambulance had been prepared with Centrasi atmosphere in case the creatures needed it but their suits were left on for the short run to the hospital, where a ward was also ready.

Gibbs climbed to a step of the van and glanced upward at the towering hull of the ship. He grinned cynically at Glenn. "There's your plum. All you have to do is pick it for Pop Kendricks. If it turns out to be Fourth Order he'll pat you on the head and maybe give you a one-grade promotion.

"And don't worry about the owners of the thing. The poor devils are in no condition to object to anything!"

IV

SHIPS were admitted to foreign repair bases of members of the Galactic Council on what was virtually a salvage basis. In the beginning there had been some logical necessity behind it. But now all that Gibbs said of it was true—legalized highway robbery when it was enforced. Glenn knew it was an archaic reminder of barbaric days. But

the custom was still on the books to be used when occasion demanded—occasions like this one.

In the early days of space travel there were worlds whose technique and science were hopelessly mismatched against others. Engineering on these separate worlds had sprouted off in ten thousand variant directions, some good, some bad.

There were sporadic outbreaks of warring among these early mismatched cultures—but not nearly so many as might have been expected. There was a degree of unexpected maturity in men and their fellow creatures by the time they had succeeded in spanning the gulf between their worlds.

They formed a Council and agreed to cooperate and exchange. A ship-demanding haven of an alien world was required to allow examination of its mechanisms and devices for copying if that was desired to bring technology to a more even level throughout the Council worlds.

It was a good enough system in its day, Glenn knew. A day when the Council was young and the idea of cooperation had to be forced on some members and when intergalactic technical societies were only a dream.

But that day was long gone now. Engineering exchange had passed far beyond such sporadic contact. An unbelievably complex patent system covered the galaxies and protected all cultures and dispensed invention to all who wished it.

The old haven-salvage custom was useful only for pirating—as in the case of Fourth Order.

It didn't matter that its creators might not be members of the Council. But there were other ways, Glenn knew, besides the plunder and legal blackmail of haven-salvage laws. There was still negotiation—and that didn't mean what Gibbs had implied it was.

Glenn stood at the base of the ship with Prentiss and Martin after Gibbs left. Prentiss looked up. His eyes were already greedy and Glenn wished he

could somehow keep Prentiss from defiling the ship with his presence from here on out.

Prentiss spoke suddenly to Martin. "You can get your crew aboard for preliminary inspection. I'll go along."

He was right in assuming the initiative in Glenn's presence—technically right. It was his shift but only the hidden conflict that swirled between them would have driven him to ignorance of the courtesy due his superior.

"You seem to forget who is in command here." When Glenn recognized his own tired brittle tones he regretted the words. But there was no recalling them. The eyes of Prentiss were bright with the triumph of having forced Glenn to throw his rank.

"I'm sorry," said Prentiss. "I assumed we could go ahead with routine procedure now that the Centrasi are out of the way."

"The Centrasi are *not* out of the way. Their vessel is still their property. Post a guard and let no one aboard tonight. We will decide the disposition of the vessel after Dr. Gibbs determines the condition of its owners. Good night!"

He hung his spacesuit in the dressing room. He was well aware of leaving behind him the technical organization of the department facing a blank wall. It was like an admiral leading his fleet to the site of expected combat and surprising them with April Fool.

It was what Gibbs had said. He could not get the image of the bland cynical doctor out of his mind. Gibbs saying, "Everybody so anxious to rob the poor suckers . . ."

He had to keep the men from scratching through the fine Centrasi ship like a horde of pack rats. He had to give himself a chance to bargain with Emdor. And muddling his decision was his own burning desire to know for himself whether the Centrasi had unlocked the Fourth Order mystery.

NANCY greeted him with high excitement in her eyes as he approached her. She clutched his arm

tightly and fell into step with him, walking towards the car. Her face was turned up to his and aglow as if she felt everything that he had sensed as he walked through the great ship.

"How was it, darling?" she whispered. "It must be a wonderful ship inside. What are the people like?"

He told her briefly the things he had seen, describing the Centrasi and his contact with them.

Nancy shuddered faintly. "It's horrible for them to be in such a state so far from home. Maybe you'll never find out where they come from at all if they die now."

"Very likely we won't," said Glenn. "Their star charts will probably be so unfamiliar that we can't possibly back-track them. Emdor made a crazy statement about their origin. He said they came from the back-side of space."

"What does that mean?"

"I haven't the faintest idea. Sounds almost like cross-continuum flight but that's impossible."

"You told me once that impossible is a nasty word."

He laughed softly and put his arm around her waist for a quick instant as he opened the car door for her. But when he appeared on the other side and climbed behind the wheel his face was serious.

Nancy saw it at once. "Now what is it, darling? Why the sudden heavy visage?"

"That guy, Prentiss. He's right behind me with a knife on this job. It's the first big one I've had and he's going to queer it and put himself in my shoes if he can. Besides the technical end I'm going to have to fight him all the way. I don't see why somebody didn't drown him when he was a pup—and his papa-in-law to boot."

Nancy was silent as he drove through the broad gates of the Base. They came to the short stretch of beach road that led to their own turn-off. In the moonlight and the sea and the sand there seemed to be little of the troubles that Glenn spoke of.

"It's my fault," she said at last. "It's all my fault."

The car swerved as he jerked his head about suddenly. "Huh? What the devil are you talking about?"

"Oh, darling, don't you remember what you used to say when we first went out to Ceres—It's a black-and-white situation. Treat it that way and don't get mixed up with the sterile puny grays."

Glenn smiled. "Yeah, I remember. But what has that got to do with this?"

"Prentiss. He's making a black-and-white situation, and you're trying to be gray about it. You know what you have to do to perform your job. You know what the proper treatment of the Centrasi is. But you're trying to *adapt* to the presence of Prentiss and to the fact that his father-in-law is your Commander and will get you thrown out on your ear if he can find an excuse. So you're trying to play it in the middle, a nice pale gray. You're forgetting that in a situation of this kind Prentiss and Commander Kendricks are both as black as hell."

"Whoa! Now wait a minute, lady. I picked up the wrong gal at the Base. You're not the one I had at Kendricks' party tonight."

"No, I'm not. That's what I mean. I've been a gray too ever since I came here. I hadn't realized what I was doing to you. I've been gray about this whole business of rank, trying to match daggers with these harpies who've played the game of Navy rank all their lives. I've made you be gray about such things as Kendricks and his parties, about Prentiss."

"I'm sorry, darling. It's no good at all. Neither of us can be that way. We're trying to adapt to an impossible situation and feel proud about it. When we were on Ceres you used to say that most of the adaptability people brag about is nothing but plain damned cowardice. Do you still feel the same about it?"

"Yeah—of course I do." Glenn nodded slowly. "That's why I felt so

bad seeing you trying to be like these dames scrabbling for rank instead of being just plain Nancy Baird.

"And you're right—I've been doing the same kind of thing, worrying about Prentiss and Kendricks. From the first minute I walked into the Base they acted as if I were some poor relation being forced to live with a rich uncle. It isn't that way at all, is it? I've got as much right on the Base as either of them as long as I do a real Navy job here, haven't I?"

"Sure. It's as simple as black and white and to hell with the in-between grays who haven't got the guts to be either."

"To hell with Prentiss and Kendricks," murmured Glenn fervently.

IT WAS two o'clock in the morning when they reached home. From the bedroom window they could see the spotlighted hull of the Centrasi ship like a glorious tower of light. But Glenn did not linger to watch.

They prepared quickly for bed. The moonlight was streaming in a glorious band across the floor but Glenn merely shuffled his arm gently until Nancy's head settled just right in the hollow of his shoulder. Then he closed his eyes and was half asleep almost at once.

"What's Fourth Order?" Nancy said abruptly.

"What's—*huh*? Darling, let's go to sleep. I've got to be at the Base by seven."

"I know but you can tell me in just a word or two. I heard about it on Ceres and I heard it on the Moon and while you were inside the ship I heard all the mechanics and engineers talking about Fourth Order this and Fourth Order that and would you find it in this new ship. You've never really explained it to me. What is it anyway?"

"A word or two, darling! Look, it's Einstein and Martell and Laughen and Cramer. It's space-time and multi-dimensions and higher continua—and it's two o'clock in the morning. Honey, will you please shut up and go to sleep!"

"Oh, I don't mean all that! You don't have to give me an engineering lecture. Just what Fourth Order *does*—that's all I want to know."

He chuckled softly and kissed the top of her head. "What would I ever do without you, darling? Who else would demand a thumbnail sketch of the world's most complex physical theory at two o'clock in the morning?" He paused, hugging her close.

"Well?"

"Fourth Order—it's a kind of a dream," he said slowly. "And it's poetry too. Poetry in mathematics, if you can imagine that."

"Glenn!"

"You remember Columbus in the history books. It's the same kind of a dream of going all the way around, of seeing all there is to see. A theory that you can find your way back home if you just keep on going in the same direction away from home—keep on going long enough."

"A long time ago they had a theory that nobody could go any faster than light. That was before space flight was ever a reality. Some gentlemen named Lorentz and Fitzgerald along with Albert Einstein cooked up the theory behind that. But when Laughten built the first super-*cee* ship and buzzed right on through the wall of light, as they called it then, he caused a lot of hasty revising of theories."

"So they built a new one that said we couldn't go faster than the speed of light to the *c* power—you understand what that means, honey—and we pedaled along with Second Order flight for a long time. Eventually it was knocked over by Cramer, who came up with our present day drives, the Third Order kind, which added still another *c* exponent to the theoretical limit. This is the drive that is almost universal among members of the Galactic Council and so far as is known nobody has anything better."

"But the physicists were pretty wary about setting any more limits to the speed obtainable in open space. So they

got together and tinkered with the old theories and poked among the ruins for a long time. In the end they shoveled it all overboard and came up with some brand new stuff.

"This time they said there *was* a still higher velocity obtainable, something that would make Third Order look like a three-legged cat. Furthermore they said that a ship traveling at Fourth Order velocity could actually circumnavigate space. Remember your elementary physics and the curvature of space? The curvature is real. Go far enough and fast enough and you'll end up in your own back yard—after traveling around all the space there is."

"That's what Fourth Order can do—at least that's the dream we have of it. And if it's possible, then maybe somebody knows how to do it. That's why we want to examine so carefully the ships that come from so terribly far. Now, do you understand, darling?"

He shook her gently and she gave no answer. Then he caught the deep and even rhythm of her sleeping breath. He grinned tenderly and closed his own eyes. He would have to do it all over again at breakfast.

V

HEREACHED the hospital at seven. Like everything else connected with Pacific Base the hospital was immense. But its size did not come from mere numbers of beds. It contained more machinery than a medium-sized powerhouse and more apparatus than a chemical plant.

Every other-world patient required a new set of conditions—incredible temperatures and deadly atmospheres. Deadly from human viewpoint but vital to intergalactic visitors. Many of the alien crews were injured by shipboard accidents that put their vessels out of commission. Many were sick of strange illnesses that were never identified. Nearly a thousand dead were buried in the cemetery in the hills beyond the field.

As Glenn went up the steps he wondered if the six Centrasi would soon occupy anonymous graves on that dismal hill. To him, as to Nancy, it seemed uncommonly tragic for creatures like these to sicken and die so far from their native world after so magnificent a journey had carried them to Earth.

He passed through the pleasant corridors, whose walls held back a hundred lethal atmospheres. Gibbs was already in the office. "Didn't you go home at all?" said Glenn.

"For a couple of hours. An old man doesn't need much sleep."

"How are they?"

"One died but Emdor revived. I put a crew of technicians on the job as soon as we got over here. We have a fairly complete picture of the Centrasi bio-chemical makeup now. That's what enabled me to revive Emdor."

"The outlook is not good, however, and I don't think they'll survive. Something is seriously disturbing their endocrine system and there just isn't time enough to find the cause—and then the cure."

The day seemed to darken visibly for Glenn. He shook off the depression that the lonely fate of the Centrasi induced. "Can I talk to Emdor?" he said. "That's the important thing at the moment."

"Can't your bright young technicians figure out how his ship works? Do you have to get him to show you how to run it even while you're in the process of swiping it?"

"We aren't going to steal," said Glenn evenly. "Nobody's been in the ship since last night."

"If you *don't* steal it Kendricks will fire you. That's your job, didn't you know—to steal anything anybody brings here that's of value to us?"

"I think I know my job and I'll do it my own way. Can I see Emdor?"

"Come along."

They took the elevator to the third floor, where the Centrasi ward was located. An orderly was in constant attendance to keep the Centrasi under observation and call the nurses or doctors

when necessary. He saluted as the two men entered the anteroom before the ward.

Through a large, double-thick glass panel the Centrasi could be seen. The four who remained unconscious were inert upon the low couches provided for them. Emdor was sitting up in a slumped position of despair.

"I'm going to make a physical examination of Emdor while I'm here," said Gibbs. "Do you want to come in—or talk with him from here?"

"I'll go in with you."

Gibbs opened the sliding doors of a small chamber. They entered and closed the doors. A light came on automatically as the pressure was sealed. From a cabinet they took rubberized pressure suits and donned them. Small refrigeration and air supply units were shouldered. Gibbs checked the talk circuits. "Ready?"

Glenn nodded inside the semi-flexible helmet. Gibbs turned up the pressure valves. While they waited for conditions to be equalized with those inside the ward the room and their suits were bathed in sterilizing vapor. A green light flashed at last and Gibbs opened a door leading to the ward.

GLENN learned long ago that it was unwise to assign human values to facial expressions of extra-galactic visitors but it was difficult to refrain in the case of the Centrasi.

Large melancholy eyes were devoid of lids, which gave them an expression of dejected staring. Every line of their bodies seemed to communicate an impression of overpowering burden which they could scarcely bear.

Dr. Gibbs stepped to the cyberlogue in the ward. "We wish to make an examination. Will you permit, Emdor?"

The Centrasi arose from the low couch. He approached the examination desk in the corner of the ward. Dr. Gibbs motioned him towards the screen of the color fluoroscope.

It fascinated Glenn and touched him with a faint sense of inferiority to

watch the doctors examining and treating one of the alien visitors. Their problem was an infinitely more complex one than that of the physicists and engineers who merely tried to analyze mechanical and electronic engines.

The color fluoroscope showed a clear, detailed image of the interior of the Centrasi body. "Emdor's heart," said Gibbs. He pointed towards the pulsing organ located in the right lower abdominal cavity. "It has increased in size detectably in the short time they have been here. Though I have no normal by which to compare there appear to be pathological nodules. And there is definite thickening of the arteries."

"That sounds like degenerative disease, doesn't it?"

Gibbs nodded. "It has that aspect but the question remains as to why it is developing—and with such terrible rapidity. They tell me that the symptoms of lassitude, exhaustion, increased pulse and respiration rates were unknown un-

til a few weeks ago. Their observation of these symptoms began shortly after their first contact with one of our galaxies."

"They must have picked up a bug—but what bugs cause such symptoms?"

Dr. Gibbs shook his head. "They're more careful explorers than that. I'm willing to believe that they did their work under perfectly sterile conditions with respect to themselves. You saw how it was when they approached us."

"What else can produce such degeneration?"

"There are factors which are known to cause it—but it's very difficult to see how they exist in the present case. We'll have to wait for more work on it before we reach any conclusions."

Glenn watched in silence while Gibbs finished his examination and made careful notes. It seemed to Glenn that the eyes of the Centrasi held a pleading expression, a desire to speak some thought

[Turn page]



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that he dared not or could not utter.

When Gibbs had finished Emdor said, "My request—the request I made to be set under way in the direction of our home world—will you not grant that?"

Glenn regarded the pleading Centrasi compassionately. He could not hold these creatures against their will, important as was the possibility of their possession of Fourth Order. Actually the decision was no longer his once the visitors had landed. Kendricks would hold them and Prentiss would—and all the forces of Galaxy law passed in a barbarian age would see that the visitors remained until their ship was ransacked for Fourth Order.

Glenn shook his head. What was the matter with him? He wanted to see Fourth Order as much as any of the rest of them. But he felt the eyes of Gibbs on the back of his neck and he remembered what Nancy had said—"Black and white—you can't make a compromise with things that are right and become a dirty gray. Not if you want to keep on feeling like a human being."

THE CENTRASI were sentient creatures on a plane with man. And the law of affinity between sentient beings of the universe was higher than the barbarous rules of an obsolete day in the history of space-flight.

"Your request will be granted," said Glenn slowly, "in case of your death. But we cannot justify ourselves in allowing you to depart with an almost certainly fatal illness. You must allow us an attempt to help you even with our limited knowledge of your requirements. We offer you all the services that we can command.

"In addition we shall attempt the repair of your ship, so that if you do survive you shall be able to return to your home world. In return, we ask a favor of you—that we be allowed to copy such of your mechanisms as are new and useful to us. Will you grant us such an agreement?"

Emdor was silent for a long time. He looked carefully at Glenn and Dr. Gibbs

through the transparent helmets that protected their faces. His expression was as if Glenn had just delivered a threat—an ultimatum he could not ignore. Glenn felt sick that he should take it in such a light.

But Emdor finally spoke. "I will agree to that. You are welcome to anything you find of use to you—in the ship. I trust your honor to send us on our way home when we are dead."

"Thanks—thank you, Emdor. I will see that the bargain is kept."

It would cost him his Navy career if he did have to keep it, he thought. If the Centrasi died their ship would be lawful salvage and the Navy's right to keep it would be backed up by all the archaic galactic law within a hundred million light years. But it would be kept—the promise would be kept if the Centrasi died.

Gibbs was watching, assaying his sincerity in the tight bargain he had made for himself. Now, he had to find Fourth Order if it existed in the ship. And Gibbs had to see that at least one of them survived to take the ship home.

"We know you are too sick to assist in determining the trouble in your ship," said Glenn, "but if you will allow us to take a Basal Cyberlogue recording of your mind we will have at our command all the information your brain contains regarding the ship. With the aid of that we should be able to make the repairs."

"No—I am sorry," said Emdor sadly. "But that would be of no assistance. We are not technically trained, my companions and I—not in the structure of the ship and its engines. We are astrographers, not engineers. Likewise we are not physicians or perhaps we could assist with the recovery of our own physical bodies.

"No, in these fields of knowledge, you would find our minds blank. We can contribute nothing that would be of advantage. The mechanisms of the ship are so wholly automatic and ordinarily self-repairing that it is not considered necessary that its users understand its

engineering. Because of this we are certain that the damage is tremendous and your chance of repairing it hopelessly small."

"You don't understand how much we can glean from a Basal Cyberlogue," said Glenn. "The mere fact that you have piloted the ship indicates knowledge in your minds that will shorten our work considerably. There are thousands of facts you are aware of which would help us."

"No."

For the first time there came to Emdor's face an expression of resistance. It was a sudden flame of rage, so out of keeping with his other expressions that Glenn and Dr. Gibbs were taken aback.

Then the Centrasi crumpled. He had been standing before them and now his body twisted and collapsed upon the low couch.

Gibbs turned swiftly to a shelf beside the cyberlogue. He grasped a hypodermic and measured a precise quantity of fluid from a bottle. He turned the Centrasi over.

"You'd better beat it," he said to Glenn. "This is going to be a long tough haul. I'll be with them most of the day. I'll give you a report this afternoon."

"Okay, I'll be waiting for it. You can't let the poor devils die. And you know what happens to me if they do."

"Beat it."

VI

OUTSIDE the hospital Glenn mounted one of the small tricycle scooters used for transportation about the field. He headed for the shops and the Centrasi vessel a mile away.

As he approached the ship he saw an antlike stream of figures moving between it and the shop. Entry was being made into the ship. His order to post guard had been violated.

Rage obscured his thinking for a moment but reason took over during the delay required to reach the spot. There was only one explanation—Prentiss. The voracious engineer had overstepped

himself this time.

Glenn parked the scooter and strode into the engineering office. Prentiss was not at his desk but Glenn knew that an open phone line would have been run into the ship. He placed the call.

His assistant answered within a few seconds, his countenance faintly insolent behind the protecting helmet of his suit.

"I ordered a guard posted, and the ship to remain unviolated," said Glenn. "Why was it not done?"

"It was—for a time," said Prentiss blandly. "The order was then countermanded."

"By whom?"

"Commander Kendricks."

"On whose recommendation?"

Prentiss did not even blink. "Mine," he said.

"Keep your line open," said Glenn. "I'm calling the Commander."

It took longer to get Kendricks but his face appeared at last as if he had just been interrupted in the midst of negotiations affecting the destiny of worlds and of nations. He glanced at the two faces appearing on his screen. "Who? Oh, Prentiss!"

"I'm calling, Commander," said Glenn evenly. "I ordered a guard posted on the Centrasi ship. The order was broken without my consent."

"Captain Baird, five precious hours were wasted as a result of your purposeless order. Five hours in which—"

"Commander, may I ask—does this mean that I am removed from supervision of this project?"

For an instant that seemed to stretch into ages Glenn saw the affirmative answer hesitate on Kendricks' lips. Then the Commander shook his head. He could not risk Glenn's dismissal on so trivial a matter. After all he had come to Pacific Base on Central's recommendation. That made a difference.

"No, you are in command of the Centrasi project, Captain. But there are some matters in which—"

"Then I must ask that my command be recognized. Otherwise I shall be

forced to submit my resignation as of this moment. Confirmation in writing will go forward to Central and—"

Kendricks' eyes darkened. "In view of your inexperience at so large a base as Pacific and in view of your lack of understanding of urgency and procedure in such instances as the present—your lack of adequate reason for not going ahead with analysis at once—perhaps it would be possible to find a more suitable place at Pacific, one in which you could become more thoroughly acquainted with the atmosphere and tenor of the place as a whole."

"I was not consulted about my reasons for issuing the order," Glenn said.

"Please explain them. I was not aware that you had a definite purpose in mind."

"The ship is the personal property of the Centrasi. Furthermore it belongs to a race of which we have absolutely no knowledge. From all appearances they have a technology equal to or perhaps superior to anything found in the galaxies of the Council.

"Prudence would dictate the most diplomatic approach. With this in mind I ordered their vessel protected from intrusion pending an agreement by which we could gain access to their technological processes—including Fourth Order if it exists there."

Kendricks glared inquiringly at his son-in-law. "I was informed," he said, "that the Centrasi were virtually helpless and in no condition to discuss the matter."

"They were—last night. But since we boast so loudly of our medical facilities it seems justified to place some degree of faith in them. In this case, at least. Dr. Gibbs was successful in reviving the Centrasi leader."

"And you were able to negotiate an agreement? Let me see it?"

Glenn shook his head. "They have granted permission to copy any useful mechanism we encounter in their ship. But it is verbal, although completely recorded through the cyberlogue and witnessed by Dr. Gibbs."

THE acknowledgment of defeat in the matter brought a red suffusion to Kendricks' face and neck. Suppressed rage showed in the eyes that he turned again upon the image of Prentiss.

"Very good, Captain Baird," he said. "I apologize for the intrusion into your command. You may proceed. Report directly to me the moment there occurs a variation in circumstances."

"Yes, sir. Thank you, Commander Kendricks."

He cut both lines quickly.

Black and white. He was sweating now and his hand was trembling faintly as he took it from the phone switch. He had won that round, he thought, but if he had taken time to think about it carefully he would never have gone so far out on a limb as to give Kendricks the chance to saw it off.

But Nancy was right. It was black and white and you could win by playing it that way instead of being a dirty gray. He could not restrain a minor glee in knowing that Prentiss was at this moment getting a dressing down from his father-in-law. Sometimes nepotism could pay off too well.

But there was nothing permanent about the triumph—yet. They were out for his scalp and there seemed nothing in the long run that would keep them from getting it. At the moment that didn't matter, however—he had made a promise to Emdor.

That *did* matter.

He dressed and went out to the ship. A freight hoist had been adapted to the hauling of men and materials into the vessel. So far the ship had not been exhausted of the Centrasi atmosphere due to the possible effect upon the machinery. Prentiss would not slip on a technical detail of that kind, Glenn reflected.

He found Prentiss alone in a long gallery packed with devices of incredible complexity. The gallery stretched away from them a hundred feet on either side. It was crammed with cables whose individual wires almost certainly numbered into the millions. Close

spaced, islands of components interrupted the streaming flow of wire. A thousand connectors dipped into an opaque housing and reappeared on the other side, regrouped, rearranged, carrying on their joint flow to yet another island where they parted, never to find each other again in all that vast stream.

As the two men looked upon this magnificent machine the complexity of their rivalry seemed to diminish for the moment. It was the single common hold their minds could grasp simultaneously. It was the one spot of common ground in all their lives.

"There's Fourth Order here," said Prentiss almost worshipfully. "There's got to be. There's never been a ship like this before in all the galaxies. There's never a ship that could go beyond the galaxies with such freedom as to permit a crew of only eight. It couldn't be anything but Fourth Order."

"I hope so," said Glenn. "But whatever it is we're going to take a devil of a long time to plow through all this and find out what makes it go. We've always designed and engineered with the basic belief that the greatest machine is the simplest. Unless all this equipment is absolutely necessary you'd think the Centrasi designed with just the opposite view."

"We'll find it," said Prentiss confidently. "We'll find Fourth Order if it's here. If it isn't this is no more than a mess of junk that doesn't matter."

With this reminder of Glenn's obligation to the Centrasi the moment of unity passed.

"I suppose Gibbs has no objection to my interviewing the Centrasi now that they are revived," said Prentiss. "I'd like to see what information can be obtained from them."

"I have already taken care of that," said Glenn with sudden defensive coldness. "The crew are astrographers. They know nothing of the ship."

"That just doesn't hold water! If they told you that, then they're lying!"

Glenn regarded his assistant for a moment. Prentiss' eyes were challeng-

ing, hostile, but Glenn chose to ignore it. "You'd better take off," he said. "You'll be handling the night shift tonight and I don't want anything done on the shift without your immediate supervision."

"Is that an order to leave?" said Prentiss.

"What would you do if it isn't?"

"I'd like to stick around for another couple of hours at least to get some degree of orientation."

"Suit yourself in that. What I said was only a suggestion."

"Thanks," said Prentiss stiffly. "I'll leave by noon."

VII

IT WORRIED Glenn too—the thought that Emdor had lied. He left the ship and went to the communication office after removing his suit. A discrepancy had bothered him ever since he had spoken with Emdor in the hospital. It had to be checked.

He found the original transcripts of the communications with the stranger on the previous night. His memory had been correct. Kendricks had advised him that the Centrasi wanted to use the Base facilities for repairing their ship. That was the way the original was worded. The Centrasi had wanted to do the work. That didn't jibe with Emdor's denial of technical abilities.

Somehow it jolted the problem out of straight black and white, shoving it in amongst the indefinable grays, making characters like Prentiss and Kendricks out of the Centrasi.

There was, or course, the possibility—the immense possibility of error through the transcribing of the Galactic Code. That was a clumsy tool at best. Nevertheless the message stood. Gibbs called while Glenn worried over and around the discrepancy.

"Emdor is hanging on," he said. "But two more are dead. I thought you'd like to know. None of them can last much longer."

"How long have the two been dead?"

"About ten minutes."

"Are you doing an autopsy?"

"It hasn't been started but we'll get right at it."

"Then there's still time—there's enough life in the brain cells. Use the intensifier on the cyberlogue and make a recording of everything you can pick out of the dead brains. Go deep."

"But Emdor said—"

"He can't kick about reading the dead ones. They've got information that can help us, I'm sure. Get the tapes over here to me as soon as you finish running them."

"Kendricks must have got to you. Glenn, stay on the level with these Centrasi. They're decent guys."

"I will, Doc. Don't worry. But I'm beginning to wonder if they've been on the level with us. I think they know more than they admit. I think—I'm pretty damned sure now—that they are deliberately trying to keep something from us."

"Even if it involves their own sacrifice? That would be a pretty big and important something."

"That's what I'm worried about. Get me those tapes as quickly as possible. I'm not violating any promise to the Centrasi and I won't—as long as they stay on the level with us."

"They'll be ready after lunch."

The tapes were on Glenn's desk when he returned from the cafeteria at noon. He went at once with them into the analysis section, picking up a tape there covering Fourth Order theory.

The great machines of the analysis section were somewhat analogous to the ancient punched-card machines. They could check the immense store of information gathered from the brains of the dead Centrasi—check this information against the master Fourth Order tape to determine if there was any information of any kind concerning Fourth Order in the Centrasi brains.

Glenn donned a helmet by which he could observe the record of the Centrasi's life as the plastic roll slowly unwound between the million-fingered

electronic scanning beam. It was a tremendous thing—reliving the alien life of the dead Centrasi. It renewed Glenn's conviction that Gibbs was right—the Centrasi were decent guys.

There were scenes of a pleasant world and impressions of quiet life devoid of the tensions and conflicts that seared the galaxy of the Council worlds. There were the words of great books, and the sound of exquisite music.

Glenn saw other Centrasi who loved the dead creature—and who were loved by him. These would never see him again for there would be another strange grave on the hill beyond the Base. But there was nothing in all that to give an Earthman fear because of what the Centrasi might be hiding. There was no clue at all as to why anything should be hidden—of great weapons or the whisper of conquest, which could so incite the dread of war within Council worlds, there was not an inkling.

There was not time enough to relive a whole life moment by moment. Reluctantly Glenn sped the tape ahead at a pace that he could not follow. There was only one thing he had to find at this moment.

ON THE screen before him he watched anxiously for a sign. The signal of congruence would appear there if one of the millions of neural patterns of the Centrasi conformed with the Fourth Order array on the master tape.

He had been there an hour and a half when the green fantasies on the screen began to slow their irrelevant contortions. He straightened in his chair. His hand touched a knob for sharper outline.

A structure of infinite complexity was slowly building on the face of the screen in three-dimensional perspective. He watched it, scarcely breathing, awed by the complexity of that figure and what it signified.

They had Fourth Order. There was no question about it. But the figure continued building and it told an even

broadier tale.

These eight who had come to Earth were engineers—Fourth Order engineers. So vastly competent with it were they that they could have designed and built the entire ship from base elements. They could have designed its great Fourth Order engines from scratch.

And this they had lied about.

Slowly Glenn reached for the switch to cut the motor of the machine. He took the tapes out after rewinding and moved away.

He wondered now what his promise to Emdor meant. The Centrasi had said they could duplicate anything found *in the ship*. He remembered how the Centrasi had emphasized that, how terrified he had been at the thought of a brain recording.

Glenn understood now. Earthmen could never—for decades, at least, perhaps centuries—they could never achieve Fourth Order. It would be like an aborigine trying to copy a common automobile engine by merely examination and duplication. The parts would be there. He could observe and measure. But the machine could not be duplicated from that alone. It could not be understood without all the vast science of metallurgy and chemistry and engineering behind it.

So with the Centrasi ship. Men could take it apart, measure it, analyze it—but they could never make it go. There were unknown and unsuggested sciences which would stand indefinitely between them and Fourth Order machines that would work. The essential things were locked in the brains of the Centrasi. And the Centrasi were willing to die to keep them there.

It made no sense. He glanced down at the can of tapes in his hand. He ought to march triumphantly into Kendricks' office and lay them before the Commander. It would assure his career and put him forever beyond Kendricks' petty nepotism. He would never have to be afraid of Prentiss again.

[Turn page]

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But he couldn't do it—not now anyway. He had to know why the Centrasi considered it worth their lives to keep the secret of Fourth Order from men. If it was worth their lives, would it be worth his career? He wondered.

WHEN he reached his own office again there was a second message from Gibbs. "Come over as soon as you can. I'll show you what's killing the Centrasi. Emdor is alone. The rest are gone."

Glenn locked the tapes in the desk and took the scooter across the field. The sun was low in the sky, and he rode almost all the way in the shadow of the towering Centrasi ship. Gibbs was at his desk, seemingly idle when Glenn walked in.

"What have you found?" said Glenn. "Can we cure Emdor?"

"What have you found? Fourth Order?"

Glenn nodded. "They've got it. They lied to us. They know the stuff from the ground up."

"I know. They don't want us to have it."

"Why?"

Gibbs hesitated. "It's the damndest most complex series of factors that you could ever hope to run into. Look at this."

He held up a brown object the size of a walnut. "Know what that thing is?"

Glenn shook his head.

"It's one of their adrenal glands."

"I wouldn't be likely to know it from a football. Is there anything wrong with it?"

"They have an endocrine system almost identical with ours—which is not as surprising as it might be. We know that evolution can be parallel in widely scattered galaxies."

"And so?"

"A normal adrenal is yellow. The outer structure, the cortex, is normally filled with fat droplets containing a score or so of hormones. The brownish color of this one indicates that it has been drained of its hormones."

Gibbs picked up another specimen. "Here is a thymus gland—almost atrophied. And here is a color picture of the stomach lining. Bleeding ulcers. Finally here is a section of kidney tissue. It has turned into a hormone-producing gland. We call it endocrine kidney. It raises the blood pressure."

"But what caused such terrific damage?" exclaimed Glenn. "And what can be done about it before it becomes fatal?"

"We call it AR," said Gibbs. "Alarm reaction. Back in the twentieth century when it was first identified it was responsible for about eighty percent of the deaths among Caucasian peoples outside of the major bacteriological pathologies and cancer. Men are still dying of it, though not to the extent they were in that day."

"I never heard of it."

"No, it's not often spoken of by name. It's called by some name to describe the affliction of the organ it destroys—heart, kidney, pancreas or whatnot. Strictly speaking it's a jungle disease, an illness that can afflict only the inhabitants of a jungle where life is precarious from moment to moment and there is no assurance of survival from one day to the next."

Glenn laughed sharply. "That's not our civilization you're speaking of—or is it?"

"A civilization can be pretty well defined by what its members die of. And any community in which AR exists is a jungle society regardless of technological accomplishments."

"But the Centrasi?"

"All organisms of the basic type of endocrine structure which they share with us are subject to the alarm reaction. It works this way—any kind of stress situation causes the pituitary gland to release a protein substance called adrenocorticotrophic hormone, ACTH for short. In turn this discharges the hormones from the adrenals into the blood stream."

"This is a normal process, designed to enable the body to meet stress. If the

condition of stress is such that it cannot be overcome, however, as in a perpetual jungle environment, this endocrine process defeats its own purpose. The protective mechanism turns upon the body itself and destroys it.

"The hormones destroy the thymus, produce enlarged heart and sclerotic blood vessels, destroy the kidneys. The organism finally dies of exhausted resources if no relief is obtained from the stress situation—literally killed by its own defenses. That is the alarm reaction.

"It was first demonstrated in rats by forcing them to endure extremes of temperature, activity and wakefulness. But, more significantly, AR can be set off in higher creatures by any kind of stress—psychic stress in particular. The initial trigger action is a neural stimulus of the pituitary."

"What is the cause of this neural stimulus in the Centrasi?"

"We are."

FOR a moment Glenn sat motionless as if still awaiting Gibbs' answer. The words were like a delayed explosion. Then he half rose from his chair and leaned across the desk. "What the devil are you talking about? We haven't done anything to them!"

"I think we have—we *do*. Scanning through the tapes we ran off from the dead brains I found proof of it. You see, the structure of the universe seems to be formed of widely scattered galaxy clusters. Our own Council is composed of the civilizations of one such cluster.

"But we know that the distance from any Council world to the next cluster is so fantastic as to make hopeless any contact with even Third Order ships. The Centrasi come from a similar cluster all the way across the curvature of space."

"That could be what Emdor meant by saying he came from the back-side of space," Glenn mused thoughtfully.

"Perhaps. I don't understand the technical aspects of it. At any rate the

Centrasi come from a cluster such as ours at an immense distance. They have just found Fourth Order. This ship was an exploratory one attempting to go all around the curve of space just as you say you would like to do. And then they broke down with some kind of mechanical trouble they couldn't repair in space.

"Their race is so old, and they have had a stabilized evolution for so long that they have never encountered any form of life but their own in all the recorded history of their race. This single Centrasi race has colonized hundreds of thousands of planets.

"Behavior has become so stabilized and eccentricities so thoroughly removed from their makeup that wherever they go in their own galaxy cluster they know what to expect from a fellow creature. They know how he will react, what their mutual obligations are. Does that give you an idea of what we have done to them?"

Glenn stared at the Doctor. "Stress—they can't predict our behavior. Our very presence is a continuing stress..."

Gibbs nodded. "We cannot know all the details of the psychobiological chain involved but it is safe to conclude that contact with sentient life other than their own is sufficient to set off the alarm reaction in them. They are in the peculiar position of having to live out their existence in utter isolation or die.

"It would be a major evolutionary change for them to adapt to other species. They might do it on a long-term biological basis but it would involve the destruction of their present culture in the process.

"It appears that their first contacts set it off, perhaps on Paramides. Then they went through the resistance stage of AR in which they built up adrenal reserves again and partially regained a biochemical balance. There was recovery of the thymus and sugar and chloride levels in the blood.

"Now these things are deteriorating again. They are in the final stage of exhaustion preparatory to actual death.

We're like a disease to them. Can you understand that fully, Glenn? Each one of us is a single germ. We infect them as surely as if they had breathed a deadly virus."

Glenn's eyes were focused far across the field where a giant gray structure nosed towards the sky. "They've got Fourth Order," he said almost in a whisper. "They've got Fourth Order for sure. They could take us all the way around the curve of space. We could see all there is to see, know all there is to know in the whole universe."

Gibbs sighed and shifted lower in his chair. "Another year or two now and our expeditions will be overrunning their galaxies. In time it is just barely possible that some individuals of their race might develop a resistance to the situation but it's not likely.

"We won't give them time for that anyway. We'll rush in, trying to bargain and trade, selling them soap and deodorants. We'll sap their scientific resources. And they'll be utterly helpless. It will be another case of 'Lo, the poor Indian.' On a galactic scale this time."

Glenn reached across the desk and took the small brown object in his hand. The adrenal felt cold now and faintly resilient like old rubber—the coldness and fleshy resilience of something too long dead. He glanced from it to the great ship again.

"It's so intangible," he murmured. "You can't get hold of it with your brain. That ship out there—it's more alive than this hunk of meat. Yet this little thing stands in the way of obtaining that ship. Your mind can't get hold of something as intangible as that."

Gibbs nodded slowly. "Intangible—too intangible for characters like Kendricks. He'd snort in derision. And Prentiss would laugh in your face if you told him that a piece of flesh no bigger than a pigeon egg barred him from Fourth Order. Yes, it's intangible like all the other things men's minds have fought to grasp for the last ten thousand

years—intangible like love and loyalty and freedom.

"The Centrasi won't fight us, either. That's the part we'll like best. We'll just come on the scene and they'll wither away as if a plague had cut them down—all because of a great intangible."

Glenn didn't move his eyes from the ship but he spoke slowly at last. "No—it won't be that way, Doc. It won't be that way. We don't need Fourth Order that badly. In fact, I don't think we need it at all."

VIII

DR. GIBBS sat motionless in the chair as if a hair trigger had been suddenly set within him. Then his bony frame leaned carefully across the desk. "Do you mean that, Glenn? Do you *really* mean it?"

"Sure I mean it. There's no other thing I could mean. It's straight black and white."

"Huh?"

Glenn grinned faintly. "That's what Nancy would call it—black and white. You know something's right, you go ahead and do it. You don't get all fouled up with considerations and alternatives and 'adaptions to the situation.' It's plain black and white and there's no in between."

"That Nancy of yours is a smart little girl, but some things are inherently in between, I'm afraid—like this situation. Kendricks knows too much. You can't keep it secret."

"We *can* keep it secret. No one actually knows the ship is Fourth Order except you and me. We'll get rid of the ship."

"How?"

"Look—Emdor knows what's happening. He knows all about AR or has deduced enough to know that his people have got to abandon contact with other races. So he and his companions are sacrificing themselves to keep us from finding his home world.

"We'll tell Emdor we understand.

We'll put him aboard the ship and send it off. Let him explode it in space if he wants to. But we'll be rid of the ship. Men like Prentiss and Kendricks and all their blundering ravaging kind will never set foot on the Centrasi worlds. We'll tell them that Emdor escaped with one of our medical pressure suits and took off. It could happen at change of shifts tonight."

Gibbs seemed to be holding his breath as if witnessing a vision. "It might work—it just *might* work! And Emdor would surely cooperate on a plan like that! But you—you're taking a tremendous risk. You'd be stripped of rank—court martialled and disgraced if it ever became known."

"I'll take that chance. It's black and white."

They were silent a moment, enjoying a new understanding of each other—their eyes fixed on the mute emblem of defeat, the sick exhausted adrenal gland of the Centrasi. The phone buzzed abruptly. Gibbs reached for it with impatience and listened a moment. Then he rose in a half crouch of sudden defense.

"What is it?" Glenn demanded.

Slowly Gibbs put the phone down, his face burdened with defeat. "Emdor—they got to him. Prentiss came in. I guess Kendricks was in on it too. Prentiss had a pass to contact the Centrasi and the orderly let him through. Now Emdor's out cold, maybe dead. That's military organization for you! Everything according to altitude. If the man above you says hell is frosted over, it's so. Come on, let's get up there."

Glenn joined him and they raced along the hallway. They took the steps two at a time rather than wait for the elevator. "I should have foreseen this," grunted Glenn. "Prentiss told me he thought the Centrasi were lying about not understanding the ship. I should have known he'd try to get to them."

"And so Earth gets Fourth Order and the Centrasi get extinction. A fine piece of work!"

"We'll see. It may not be as bad as that."

The ward looked empty as they approached. Then they saw Emdor slumped on the floor, his limbs sprawled helplessly. Gibbs cursed the orderly who had admitted Prentiss and then apparently vanished in terror.

"Look! He's got the cyberlogue turned on and he's got the intensifier fastened to his head. Look at that wire trailing under him."

They hurried into the dressing chamber and slipped into the pressure suits. It seemed an eternity of waiting for equalization and sterilization. At last the door opened. Gibbs rushed in and turned the Centrasi over. A moment's examination showed that Emdor was dead.

Gibbs examined the cyberlogue intensifier fastened to the skull. It was an instrument which could probe the lowest depths of a sentient brain.

[Turn page]



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"Leave it there," said Glenn. "I want to have a look."

He moved to the machine and adjusted the controls. He plugged an intensifier into his own suit and cautiously advanced the probe depth. Bleak frustration clouded his face as he searched through the still lucid thought patterns in the dying cells of the Centrasi brain. At last he jerked the plug out.

"What is it?" said Gibbs.

"Prentiss, all right. He induced a heavy neural shock with the intensifier, momentarily breaking down Emdor's careful defenses. If he used a recorder he got everything he needed to know about Fourth Order. Emdor was a principal engineer in the work. Prentiss can build one from scratch with the data from Emdor's mind."

"Then there's not a chance in the world of supressing this."

THEY stared in silence at the dead Centrasi, whose sacrifice had been so vain. Glenn thought of that incredibly distant world of beauty and charm and ancient civilization that was old when Neanderthal walked the Earth. He thought of men of Earth traveling to those fair worlds with commerce and huckstering and greedy exploitation.

"How long do you suppose we can get good reception from Emdor's neural patterns?" he said abruptly.

"About twenty minutes."

"Keep the body right here as it is. There may be just one slim chance if I can get back in that time. Wait for me."

He rushed to the lock chamber and stripped off the suit while Gibbs demanded to know what he was going to do. But Glenn went on without offering an answer. He skipped down the stairway again and sped away on the scooter, cutting into the shadow of a hundred-thousand-ton ship that was being towed out to the take-off area.

And then he was beneath the oval of the Centrasi ship. He donned a suit and lifted himself into the vessel with the freight hoist.

His guess had been right. He found Prentiss and Kendricks in the main drive chamber. Through the helmet plastic their faces wore defensive surprise as he entered the chamber. It changed swiftly to hostility as he strode toward them.

Kendricks seized the initiative at once. "It is just as well that you followed Lieutenant Prentiss over here," he said. "You will be interested to learn that he has been successful in wresting the secret of Fourth Order from the Centrasi."

"I know. I saw Emdor—dead. I would be more interested in knowing when it became a policy of the Council to approve deliberate murder in exchange for technical data."

Prentiss' face went white. "I'll jam that down your throat! Emdor was nearly dead. He would have gone off in the next ten minutes and carried his secret with him. It was wholly accidental that—"

"Medically, it was murder. Gibbs can testify that the shock of the intensifier killed him. And you have forgotten the well-known fact that if he really had any secret to which we were entitled it could be obtained from his dead brain as well as his live one."

Prentiss smiled. "And you forget that there is no proof that I *didn't* get it from a dead brain. No one can determine whether he died five minutes before or after I entered."

"There's no proof except the indelible record you left in his mind!"

It was incredible, Glenn thought. Prentiss was terrified and his thinking processes were utterly devastated. He was not thinking in any respect like the cold technical precise Prentiss who could direct the analysis of a ship like this.

Kendricks stepped forward. "I think nothing irregular will be found in the conduct of Lieutenant Prentiss," he said evenly. "It would be comforting for you to be able to say as much for yours. It appears that you were instru-

mental in keeping all others from interviewing the Centrasi with the object of deliberately suppressing the knowledge they might have given out.

"What motives you had remain to be determined but these facts, if proven by court martial, would make it difficult to avoid termination of your Navy career in complete disgrace. Perhaps it would be just as well if you eliminated any suspicion from your mind regarding the irregularity of Lieutenant Prentiss' actions."

So that was it, Glenn thought. Kendricks was worried too—and scared. And he was willing to bargain. But he held all the bargaining power. He held the secret of Fourth Order and that revelation would smother any accusations Glenn might utter against the two.

There was nothing that he could barter against their knowledge of Fourth Order. But he had to make a try. "Yes—I knew they had Fourth Order," he said slowly. "And I intended to suppress it."

Like an old skin the gloom vanished from the faces of Kendricks and Prentiss. They smiled with braggart confidence.

"Let me show you why," said Glenn softly.

He took the damaged adrenal gland from a pocket of the suit and held it up before them. "There is our barrier to Fourth Order." Then he told the story Gibbs had given him, the story of a great race whose psychic reaction made of man a lethal disease in their midst.

The two of them looked as if convinced of Glenn's insanity before his plea was half finished.

PRENTISS exclaimed, "Do you think we're going to be stopped from utilizing the greatest mechanical development in the history of the galaxies—stopped by that chunk of meat that's smaller than my fist? You must be crazy! We're going to have Fourth Order in this end of the universe and it's very sad if the race that invented it

can't stand visitors!"

"You and Dr. Gibbs have stepped far beyond the bounds of your authority," said Kendricks icily. "It is fantastic for you to pass judgment on this situation. And it is equally absurd to think that we would deliberately harm another race by improper use of Fourth Order—even if it were possible in the unbelievable manner you suggest."

"We will take all necessary precautions. There is no barrier, however, that cannot be overcome in time. We will visit the Centrasi and confer with them. Between our two races the problem can most certainly be solved."

"The moment one of our ships lands on a Centrasi world their race is doomed. We're a disease! Each of us is a single germ which can infect them with a virulent charge of AR. There can be no conferring with them without destroying them. Why can't we just let them alone? Surely the rest of the universe is big enough for us. Our existence doesn't depend on going there and selling them shiploads of soap and confetti."

"Your attitude clearly indicates your incapacity to handle matters of this scope, Captain. As of this moment you are relieved of your charge. Lieutenant Prentiss will supervise the analysis of this ship from here on. Please report to my office in the morning, Captain Baird."

"All right. I know when I'm licked," said Glenn wearily. He pocketed the specimen adrenal gland and turned away. Then he paused. "There's just one thing I'd like to show you—something that you overlooked in the Centrasi brain. Will you come with me while there is still time to pick it up?"

"What do you mean?"

"Emdor's mind is still alive enough for probing. Come and listen to just this one thing. It's evidence—you can't withhold from me the privilege of presenting evidence of value in the proceedings against me."

"Very well," said Kendricks. "We will

examine anything you have."

He moved readily as if anxious to prove his magnanimity and fairness of mind now that he had triumphed in the matter. Prentiss came reluctantly for to him it was only an added irritation.

Gibbs was waiting in the ward when they came. "You stayed pretty long," he said to Glenn. "I don't know about this now."

"Let's hurry," said Glenn. "Please put on the intensifier pads," he directed Kendricks and Prentiss. He looked through the glass to check if the other line were securely on the dead skull of Emdor.

Prentiss watched in hostile silence and sat down before the panel. Kendricks sat opposite with an air of tolerant amusement. Glenn faced the control panel. The impressions available from Emdor's mind were truly feeble now. He prayed that he hadn't taken too long, that they wouldn't be too weak.

It was eerie, journeying back through the dead creature's brain—like walking through the long abandoned corridors of a ghost city, seeing it alive with scenes long vanished. He adjusted the machine carefully, searching through the millions of neural patterns for the one he needed.

Then he found it—that area of incredible fear, that violent pattern of stress that had killed the mighty intelligences.

Prentiss caught it suddenly. He looked up in a moment of understanding fright, half rising from his chair. "You can't!" he screamed.

Swiftly, Glenn spun the dial of the intensity control to its utter maximum.

With a low moan Prentiss slumped back into the chair, his face blanched. Kendricks, not anticipating the sudden blast, stiffened and was still, his breath heavy and gasping.

Glenn cut the switch. Beyond the glass wall that separated the anteroom from the ward, Gibbs stared. "What did you do to them? What happened?"

Glenn's lips made a thin tired line be-

fore he spoke. "I let them feel what it's like to be a Centrasi—on Earth. You'd better come out and have a look at them now."

GIBBS joined him in a few moments. He looked at the stiff unconscious bodies of the two men. "You knew what you were doing. It *could* be murder."

"I don't know. I had to take the chance. See how they are, Doc."

Gibbs bent over them with a stethoscope. "It's difficult to know what the total reaction will be. If you blasted them with the full power of the cyberlogue while it was probing the stress pattern in Emdor's mind it may set up an AR in them that can't be stopped."

"They don't have the Centrasi psychic makeup. It couldn't feed on itself like a chain reaction. They will recover if they're still alive."

"Then what the devil did you hope to accomplish?" Gibbs exploded.

"We'll see. Maybe I was wrong—maybe not."

They were placed in a hospital room on beds. Glenn watched over them in the dimmed light of a lamp. He prayed mentally for their recovery before the midnight change of shift.

An hour before midnight he left for a moment to call Nancy for the third time. "I'm sorry, darling if I've messed things up for us," he said wearily. "It looks bad. This may have been a black-and-white deal, but right now it looks wholly black. But I had to do it."

"Let me come down there with you."

"No. Go to bed and get some sleep. I'll call you in the morning. If they haven't revived by then . . ."

They were awake when he returned to the room. Prentiss was sitting up and his eyes were those of a man who has seen the gates of hell. "You were right," he said hoarsely. "We have no right to destroy them like that. They'd never have a chance against us. We can do without Fourth Order."

Kendricks was lying still but his eyes were open. He nodded. "Walt's right—

and you were right, Captain. What can we do?"

Glenn had to fight to overcome the moment's weakness that threatened to overpower him at this reprieve for both himself and the Centrasi. "Come on," he said. "It won't take long."

They returned to the ship and Glenn looked up to the great bulk of it looming in the darkness. There was longing in his heart and an ache in his throat. It was like a Columbus, he thought, gazing upon a fully-fitted ship that would take him to all the far dreams he had ever dreamed—gazing upon it and deliberately turning his back forever to those dreams.

He would never ride this ship now along the far curve of space.

They went inside and Prentiss showed him the records from Emdor's mind, the details that would make Fourth Order available to man. It was a vast and complex thing and Glenn felt sure that Prentiss would remember no significant part of it. They left it where it was.

THEN Glenn stepped to the intercom system they had spread throughout the ship and gave warning to the analyzer crew. "Evacuate ship! The Centrasi have escaped and are in control. They are lifting ship in ten minutes. Evacuate ship at once!"

When the warning had been obeyed the three of them went to the main power room. They fitted up a time control to the great piles that drove the ship. They fitted them so that every moderator would be jerked at once. And then they put the plant in operation on primary power.

Leaving the ship they fled as if pursued and joined the host of analysts who stood waiting for the unknown. And

then Glenn saw Nancy. She was coming toward him from the parking area by the building. She ran toward him and he put his arm around her. She searched his face with anxious eyes.

"It's all right, darling," he whispered. "It worked out just the way we hoped."

They turned then to face the great ship. Inside it a timer switched the controls. The giant unmanned vessel lifted majestically into the air and soared far beyond Pacific Base into the moonlit sky.

Glenn's eyes were on Prentiss and Kendricks. Their throats worked, and he sensed that their eyes were not dry. His own were certainly not. He looked upward again, following their gaze, but the ship was already beyond vision in the night sky. Then, moments later, he saw it—a soundless flash of light that for an instant was the brightest pinpoint in the heavens.

They would hate him forever, he thought. It would be deep and murderous when that vision out of the tortured mind of Emdor wore away and they began to wonder why they had done this.

But they could never escape the knowledge that it *was* their own hands that had set the timers to jerk the moderators, sending that atomic engine into space to consume in its own fires. They would never betray him.

That knowledge would silence them forever.

And then he looked again at their faces and astonishment crept over him. There were deep understanding and comprehension there. He had been wrong, he thought. Prentiss and Kendricks would always understand why none of the races of the galaxies needed Fourth Order now. This night they had matured.

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Featured Next Issue

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Our Inhabited Universe

By JAMES BLISH

II—THE CORPSE PLANET



THE planet Venus, second from the sun, is the solar system's biggest disappointment.

For many years, we have thought of Venus as a steaming swampy world, teeming

with life. This portrait of the planet has been sketched in virtually every science fiction story which has used Venus for a setting.

There was at one time considerable justification for this theory. Venus is almost exactly the same size as Earth—its diameter is 97.3% of that of our planet, its mass four-fifths of Earth's. It has a deep thick atmosphere. Its surface temperature seems to be warmer than that of Earth, as one would expect on a planet closer to the sun than we are, but not uncomfortably so. It revolves on its axis, although rather slowly, so that it doesn't present the same face to the sun as does Mercury.

Furthermore Venus comes very near to us—26 million miles at closest approach—and even when it is farthest away from us we can get a pretty good view of it. These observations have shown us a planet so thickly covered by masses of clouds that we have never actually seen anything of the surface of the planet—although some few observa-

tions have been made of a dubious marking which some astronomers think might be a 50-mile-high mountain, a conclusion not generally accepted.

All these facts seemed to add up to a steamy marshy world, uncomfortable for men but certainly able to support life. No wonder that "green hell on Venus" has been a staple idea of science fiction for many years.

Lately, however, this view of conditions on Venus has been virtually destroyed by some new and disturbing pieces of information.

There is no free oxygen on Venus.

There is no free water, either.

These two simple facts completely explode the "green hell" theory. A third fact—that most of Venus' atmosphere evidently consists of unbreathable carbon dioxide—seems to show that Venus was stillborn.

Almost all known forms of life need free oxygen in some form—either as a gas or in solution. The only exceptions are such simple forms as the anerobic bacteria. And even these simple forms, which can split bound oxygen out of chemical combinations for their use, need water or water vapor in which to operate.

The part of the cloud blanket of Venus we can see, even when we use haze penetrating infra-red light, is very high above the surface of the planet. But it is not likely that there is oxygen or water-vapor below that level. The

WHY THE ODDS ARE LONG AGAINST LIFE ON VENUS!

clouds of Venus change rapidly, indicating the persistence of storms and gales. If there were oxygen being produced at the surface enough of it would find its way to the top of the atmosphere to enable us to detect it. This holds true also for water-vapor.

Furthermore the high proportion of carbon dioxide and the lack of oxygen tells us plainly that there are no green plants on Venus. Green plants convert the heavier gas into the lighter one. It is this action which cut the originally high carbon-dioxide content of our own air down to almost nothing and which maintains our own oxygen supply.

Since animal life as we know it depends upon green plants the moral is plain—there are no animals on Venus.

The further we follow these few simple new discoveries about Venus the more depressing they become. We know, for instance, that carbon dioxide has a great fondness for infra-red light—radiant heat. Once it has captured it, it is reluctant to let it go. A planet blanketed by carbon dioxide would therefore be very like a gigantic greenhouse, holding much of the heat which it received from the sun and letting it go only very slowly.

The surface of Venus, then, must be much hotter than the cloud-surface we can see and measure. At noon on Venus' equator the temperature is probably hotter than that of boiling water. On the night side the temperature cannot be much lower.

Thus chances for life on Venus—the old "green hell"—are not good to say the least. The notion that it could support little green men three feet high who could build flying saucers, as a recent hoaxer would have us believe, is strictly for the birds.

Yet there are still those clouds. Occasional very faint clouds have been seen on Mercury, which might have been volcanic clouds—but can Venus really be so volcanic a planet as to keep its dense atmosphere constantly full of dust to a depth of nearly 200 miles? It seems

unlikely. Venus, as we've noted, is an Earth-like planet in many respects. Probably, like Earth, it has a number of active volcanoes but it cannot be as volcanic as all that.

We know then that the clouds are not made of water vapor like our clouds. Probably some of them are dust-clouds, like the occasional dust-clouds of Mercury or the sandstorms of Mars, but only a very few of them. What are the rest of these clouds made of?

The present answer—according to the best theory we have so far—is perhaps the most discouraging idea about Venus that has been formulated since the planet was first observed. Only within the most recent tick of the cosmic clock has Man's lifetime encompassed the synthesis of plastics and met the task of putting them to work for him. Venus, by the new theory mentioned above, cooled millennia ago into a deathly embarrassment of riches. Those abundant clouds are made of—

Formaldehyde plastics.

Formaldehyde is an invisible and extremely poisonous gas. In solution—when it is called "ormalin"—it makes a very good pickle and is used in most biological laboratories as a medium in which to preserve specimens. In combination with tiny amounts of water vapor—much too small for us to detect on Venus from here—it produces compounds resembling the plastics with which we are all familiar.

The chances are good that the clouds of Venus consist mostly of small gummy drops of such plastics, plus flying crystals of formaldehyde. The evidence for this is too complicated to explore in detail here but it looks like good evidence.

The sphere that is Venus is living out its planetary life inside a plastic coffin. It is evidently not only a dead planet but a shrouded and pickled one. Its surface must be barren and desolate, scored by hot winds, marked mainly by eroded rock—its sky grey and turbulent, torn by constant tornadoes. Probably there are no mountains because of the heavy

erosion which must have been going on ever since the planet first cooled. Instead the surface must be deep in arid sand, duned and constantly on the move, broken only by a few contorted shapes of rock a few hundred feet high.

Men could set up a base there without much difficulty, once the problems of landing through the eternal clouds had been met. The "weather" would not be too severe. Only a nominal amount of protection against the heat would be needed. The air pressure would be only slightly greater than our own. The gravity would be almost the same.

Supplies of oxygen, water and food would have to be brought from Earth but that would be true for Mercury too and for the moon. Far simpler sealed shelters could be maintained on Venus than those we would need on those two worlds. But would it be worth it?

I doubt it. There would be nothing to see but thick dry fog, nothing to do but wait for the next transport with mail from Earth. Venus is so much like Earth in basic respects that no research of any importance could be done there that could not be done as well or better here at home. As an astronomical or military base it would be worse than useless. No mining could be done there worth the expense and the difficulty.

We know there is life on at least one other planet in our Solar System and it seems likely there may be life on several. But Venus, the planet we once pictured as a kind of Garden of Eden with steam heat, a living museum of our own prehistory, a teeming jungle complete with dinosaurs and giant ferns—so similar to Earth that we thought it must be our younger hoyden sister is sterile.

Venus does at least serve to remind us that life is an unusual thing. Tough and varied though the creatures of Earth's varied environments may be—from elephant and condor and man to caddisworm and cyclamen and spirochete—they all need oxygen and water vapor, and the temperature range which they can endure is very narrow.

Furthermore, Venus is not noticeably younger than Earth. Even if its atmosphere conformed closely to Earth's it would not now be in its Carboniferous Era but in one roughly approximating our own age of manipulated plastics. The planetary colors and atmospheres, clouds and soils are functions of their physical composition at the outset, not of age in years of millennia.

What seems to have happened on Venus is that it was cheated of its birthright. At its very beginning it was given less water and water vapor than Earth. Long before seas could form most of this water vapor was spun off into space while the planet was still white-hot. When Venus cooled, the remaining water vapor was too scanty to permit life to begin and plants to develop.

Without plants to produce oxygen and consume carbon dioxide Venus retained its primordial shroud—exactly the same sort of shroud that covered our own planet when it was young, before plants arrived to free the oxygen from the carbon dioxide. If all our layers of fossil plants—our coal and oil deposits—could be reburned, our air would again be devoid of free oxygen and our planet reduced to a state very like the state of Venus today.

Venus, then, is not our younger sister. Earth and Venus are twins—were nearly identical twins at birth. The difference between them is crucial for possible inhabitants of the two worlds.

Mercury—by Earth standards too hot on one side, too cold on the other, too small, too close to the sun—may nonetheless support simple forms of life. Less deadly Venus, which passes muster on all these counts, which looks to be—and started out to be—our near-duplicate, lost out through a fatal lack of free water. It is not hot enough to encourage un-Earthly life but it is not quite Earth-like enough—and can never grow old enough—to support our kind of life.

Venus is instead the embalmed and shrouded corpse of another Earth that died before it began to live.

Jo screamed as she climbed halfway up the opposite wall



The Jester

By WILLIAM TENN

Rupert, the gag-file robot, gets one laugh too many!

NOBODY has yet said that little oaks from great acorns grow. They do. Instead of a helicopter accident, *history* can happen to people. And cause even more damage. One fine day—about the year 2208, say—a bright, cheerful and maybe too - smart - for - his - own - good

young man wakes up to find he's tripped over his cleverest idea and crashed into a brand new age.

It can hurt!

Away back when—early in the nineteen hundreds—people began listening to record-players instead of trudging off

to a vaudeville theater through the cold and wet. About the same time homeowners were being sold electric bells to save wear and tear on callers' knuckles and, after awhile, a bell-button inside the house which opened the door to someone locked outside. Photoelectric cells were then in the laboratory stage and improving.

While radio and motion pictures divided the entertainment empire between them most top-level executives were finding dictaphones more efficient than human stenographers and mechanical sorters better than an army of file clerks. And, at the peak of the television boom, every bride dreamed of owning a vocalex kitchen someday that would exactly obey her most casual command to heat a roast for such and such a time and baste it at such and such intervals.

With the de-luxe models, of course, came a set of flavor-fix rheostats which, among other talents, could mix salads according to the recipe of a famous chef slightly better than the chef could himself. Then along came All-Purpose Radar Broadcast power, television went three-dimensional and became teledar, inexpensive enough so that every Eskimo could own a set and, incidentally, the only industry where an actor might make a living.

As teledar took over entertainment household devices began to move around in the form of robots powered by APRB, rocket-ships piloted only by automatics made timetable flights to every planet in the system, and everyone agreed that man could hardly ask for more control over his environment.

SO ONE fine day—oh, about the year 2208—

The doorscreen above the valuable antique radiator in Lester's living room fluoresced for a moment, then crackled into a picture of the husky man waiting outside the apartment. He wore the visored helmet of a service mechanic. An enormous yellow box beside him filled most of the doorscreen.

"Lester the Jester? Rholg's Robot Reorganizers. I have your butler-valet combo here all fitted with the special custom-built adjustments you ordered. You have to sign a danger-and-damage release before I can leave him."

"Uhm." The red-haired young man nodded and wiped the sleep from his eyes so that the worry could shine through. He rose from the couch, stretched jerkily. "I'd sign a life-and-liberty waiver to get what I need out of that robot. Hey, door," he called. "Twenty-three, there—twenty-three."

Swiftly the door slid up into its sand-wiched recess. The mechanic flipped a switch on his beamlock and the huge crate floated delicately into the apartment, bumped gently to rest against a wall. Lester rubbed his hands nervously. "I hope—"

"You know, Mr. Lester, I never thought a guy like me would ever get to see you in person. In my line I meet all kinds of celebrities—like yesterday, when I returned two receptionist-robots to the police commissioner. We'd equipped them with lie-detectors and flat feet. But wait till I tell my wife I met the biggest comedian in teledar! She always says, Mr. Lester—"

"Not Mr. Lester. Lester—Lester the Jester."

The mechanic grinned widely and appreciatively. "Like on the program, huh?" He pointed his beamlock at the crate, moving the switch from *carry* to *disrupt*. "And when one of the boys at the shop figured you were going to use this robot like a gag-writer I asked him would he like his head broken. I told him your jokes were strictly off the cuff—I heard. Right?"

"Right!" A very high, vastly-amused laugh. "Lester the Jester using a gag-writer! What kind of rumors—imagine that! Me, the glib sahib of ad-lib—as my fans like to call me—working from someone else's boffolas. *Such a thing!* Just because. I thought it would be snappy for the hemisphere's top comedian to have a robot valet who can give

with gags on demand. *Hah!* Well, let me see him."

A rattling whirr as directive force tore out of the beamlock, dissolving the yellow crate into quickly scattered dust. When it had settled they were looking at five feet of purple metal man.

"You changed his shape!" Lester yelped accusingly. "I sent you a smooth-lined twenty-two hundred and seven model with the new cylindrical trunk. You bring back a pear-shaped piece of machinery looking like a wadjacallit—as if it had a paunch all the way around. And bow-legged!"

"Look, sir, the techs just had to expand his midsection. Even on micro-wire that file of jokes took up an awful lot of space. And your order said for him to be able to work out twists on the gags in the file—so they rassed up a new gimmick, what they call a variable modifier. More space, more weight. But let me turn him on."

The man in the visored helmet inserted a convoluted length of iridium—an Official Robot Master Key—into the back of the robot's neck. Two full clicking turns and machinery purred. Metal arms crossed upon a metal chest in the accepted gesture of servility. Eyebrow ridges clinked upwards. Multilinked lips pursed questioningly.

"*Migosh!*" the mechanic marveled. "I never seen such a snooty expression on any face before."

"My fiancée, Josephine Lissy—she's the thrush on my program—designed it," Lester told him proudly. "Her idea of what a butler-valet combo should look like—sort of in the ancient English tradition. She also thought up his name. Hey, Rupert, tell me a joke."

Rupert's mouth opened. His voice clacked out, rising and falling like a sine wave. "On what subject, sir?"

"Oh, anything. A vacation trip. A small belly-laugh joke."

"Ginsberg was making his first voyage to Mars," Rupert began. "He was shown to a small table in the salon and told that his tablemate would be a

Frenchman. Since the other had not yet—"

The Rholg's mechanic leaned across his flat purple chest. "That's another gimmick—a meson filter. You said you wanted him able to distinguish between laugh-power in different gags so he could fit them to the audience. And price was no object. That's all you have to tell a tech. They knocked themselves out developing a gadget to do the job just right."

"If it does a couple of writers I know are going to be sorry pigeons. We'll see who's the comedian around here," Lester muttered. "Lester the Jester or Green and Anderson. Greedy little paper-soilers!"

"—the Frenchman, noticing Ginsberg already at his meal, stopped. He clicked his heels and bowed from the waist. '*Bon appetit,*' he said. Ginsberg, not to be outdone, rose to *his*—"

"A meson filter is what they call it, eh? Well, even that bill in galactic figures your outfit sent me will be worth it if I can get what I want out of Rupert. But I wish you hadn't spoiled his looks!"

"—this succinct dialogue was repeated. Until, the day before the end of the voyage, Ginsberg sought the steward and asked him to explain the meaning of—"

"We'd have found some way of packaging all the stuff or at least distributing it better if you hadn't been in such a hurry. You wanted him back by Wednesday, no matter what."

"Yes, of course. I go on the waves tonight. I needed the—ah, stimulation Rupert would give me." Lester ran nervous fingers through his red hair. "He seems to be okay."

"—approached the Frenchman, who was already at table. He clicked his heels and bowed from the waist. '*Bon appetit,*' Ginsberg told him. Joyfully, the Frenchman leaped to his feet and—"

"Then you won't mind signing this. Regular release form. You take all responsibility for the actions of Rupert. I can't leave him here till I get it."

"Sure." Lester signed. "Anything else?"

"—'Ginsberg,' the Frenchman said!" Rupert had finished.

"Not bad. But I can't use it quite that way. We need a—Holy atomics, what's that?" Lester rose two feet in the air.

THE robot, standing perfectly immobile, was clacking wildly, grinding his gears and *pinging* wires as if he were coming apart.

"Oh, *that*." The man from Rholg's gestured. "That's another bug the techs didn't have time to clean up. Comes from the meson filter. Near as we can figure out it's what they call an after-effect of his capacity to distinguish between gags that are partly funny and gags that are very funny. Electronic differentiation of the grotesque, it says in the specifications—in a man, a sense of humor. 'Course, in a robot it only means there's a kink in the exhaust."

"Yeah. I hope he doesn't blow that at me when I have a hangover. A robot that laughs at his own jokes! *Whoee*, what a sound!" Lester shivered. "Rupert, go mix me one of those Three-PLY Lunar Landings."

The mass of purple metal turned and waddled off to the kitchen. Both men chuckled at his bow-legged teetering gait.

"Here's a couple of bucks for your trouble. Sorry I don't have more change on me. Like a carton of Star-Gazers? My sponsor keeps me stocked to the curls on them. Licorice, maple-walnut?"

"I sorta like my cigarettes flavored with crab-apple. The missus too—gee, thanks. Hope everything goes all right."

The service mechanic stuffed his beamlock into his tunic and left. Lester called, "Three-and-twenty," after him. The door slid down into place.

Rupert tottered back with an intricate spiral of transparent tubing filled with a yellow-and-white liquid. The comedian sucked the drink out rapidly, exhaled and combed his hair back into place.

"*Flugg!* That was delicious in its

own foul way. Whoever built that master bartender unit into you really knew his electronics. Now look, I don't know just how to order you in this deal—though you're able to read now, come to think of it. Here's the script for tonight's teledar show, the straight part.

"Type a companion script for me based on each speech in the original that I've underlined, a gag variation on the statement. That's what I memorize to give the famous ad-lib effect—but you don't have to know that. Start typing."

Without a word, the robot flipped through the sheaf of papers handed to him, instantly "memorizing" on his microwire files every word in them.

Then he dropped the script on the floor again and walked over to the electric typewriter. He pushed the chair in front of it aside. His torso slid down his metallic legs until he was just at the right height for typing. He went to work. Paper boiled up out of the machine.

Lester watched admiringly. "If only his ideas are half as funny as they are fast—hello!" He picked the sheaf of typescript off the floor to which Rupert had returned it and set it on a table. "Never did that before. Used to be the neatest piece of machinery on the planet, always picking up after me. But—well, genius has the right to be temperamental!" The phone buzzed almost affirmatively.

He grinned and caught the phone as it bounded into his hands. "Radio Central," said the mouthpiece. "Miss Josephine Lissy calling. Will you take it on your scrambler or on hers?"

"Mine. LY—one hundred thirty-four—YJ. Check."

"Double-check. Here's your party."

The radio phone sputtered as it adjusted to Lester's personal scrambling system that meant privacy for a conversation on a wavelength shared by millions. A girl with hair as brightly carrotty as Lester's appeared in the tiny screen above the mouthpiece.

"Hi, Red," she smiled. "Know something? Jo loves Lester."

"Smart girl—smart. Wait a minute while I get you transferred. Looking at you on this thing strains my eyes—besides, there isn't enough of you."

He twirled a dial, translated the phone's vibrations into the frequency of the doorscreen. Then, while the instrument whizzed back into place on the ceiling, he made a similar adjustment on the doorscreen manual dials, setting it for interior reception.

JOSEPHINE LISSY'S image was radiant above the imitation radiator as he sighed down into the couch.

"Look, funnyman, this is no love-call. I'll get right down to the killing and booing. Green and Anderson have blabbed to Haskell."

"What!" He leaped to his feet. "I'll sue them! I can too—the mutual release they signed specified that my use of gag-writers was not to be made public."

She shrugged. "A lot that'll help you. Besides, they didn't publicize it—just told it to Haskell. You couldn't even prove *that*. All I got was grapevine to the effect that Haskell is screaming over to see you."

"Green and Anderson have convinced him that without memorizing their gag copy on the straight part of the show you won't even be able to ad-lib a burp. Haskell doesn't give an over-worked flash whether or not it is ad-lib—he's just scared that the first program under his sponsorship will be a flop."

Lester grinned. "Don't worry, Jo. With any luck—"

"My sacred aunt's favorite space-opera!" she squealed. "What's that?"

That was an ear-splitting series of clanks, bumps, singing metal and siren-like shrieks. Lester whirled.

Rupert had finished typing. He held the long sheet of completed copy between purple fingers and shook over it. *Whirr*, he went. *Glongety-glonk. Pingle, pingle, pingle. Ka-zam!* He sounded like a cement-mixer inside a cement-mixer.

"Oh, that's Rupert. He's got a kink in his exhaust—makes like a mindless sense of humor. Of course he isn't human but does he seem to go for his own stuff! Come here, Rupert!"

The robot stopped clattering and slid up his legs to his full height. He walked to the doorscreen.

"When did they bring him back?" Jo asked. "Did they put all the stuff in him that you—why, they've *ruined* him! He looks like a case of dropsy—as if he has an abdominal ruff! And that beautiful expression on his face I designed—it's all gone! He doesn't look superior anymore, just sad—very sad. Poor Rupert!"

"Your imagination," Lester told her. "Rupert can't change his expression even if he wanted to. It's all automatic, built in at the factory. Just because we call him by a name instead of the number cues we use on the rest of the household machinery doesn't mean he has feelings. Outside of his duties as a valet, which he performs as imaginatively as a watch tells time, he's just a glorified filing system with a wadjacallit—a variable modifier to select—"

"Oh, that isn't so. Rupert has feelings, don't you, Rupert?" she cooed at him in a small voice. "You remember me, Rupert? Jo. How are you, Rupert?" The robot stared silently at the screen.

"Of all the unquaint feminine conceits—"

There was a definite *clang* as Rupert's heels smote together. He bowed stiffly from the hips. "Gins—" he began to say. His head went down majestically, kept on going down. It hit the floor with a terrific *zok*.

Jo became almost hysterical. Lester flapped his arms against his sides. Rupert, the back of his paunch peak-high in the air, rested stolidly respectful, his body making a right-angled triangle with the floor.

"—berg," Rupert finished from where his face angled against the floor. He made no move to rise. He *whurgled* softly, reminiscantly.

"Well?" Lester glowered at him. "Are

you going to lie there and look silly all day? Get up!"

"H-he c-can't," Jo shrieked. "They've shifted h-his center of gravity and he can't get up. If you ever do anything as funny as that bow over the teledar you'll kill two hundred million innocent people!"

Lester the Jester grimaced and bent over his robot. He caught it round the shoulders and tugged. Very slowly, very reluctantly, Rupert straightened. He pointed at Jo's image on the screen.

"That ain't no lady," he enunciated metallically. "That's gonna be your wife. Or—it may not be Hades but brother it's gonna be life! Or—she's not shady, she's only—"

"Can it!" Lester yelled. "And I do mean can it!"

He crooned while the robot went into another gear-clashing paroxysm. "My fine tile floor! The best mid-twentieth century floor in the whole tower and look at it! A dent the size of—"

Jo clucked at him. "I've told you a dozen times that they only used tiled floors in *bathrooms* in the forties and fifties. Mostly in bathrooms, anyway. And that imitation radiator and roll-top desk are from two widely separated periods—you just don't have a sense of the antique, Lester me lad. Wait till we've thrown our handful of rice at each other—I'll show you what a Roosevelt-era home really looks like. How are Rupert's gags—on paper, I mean?"

"Don't know yet. He's just finished the script." The screen fluoresced along an edge. "Better get off, Jo. Someone's at the door. Call for me before the 'cast at the usual time. Bye."

AT A signal from his master, the robot scuttled to the door and *twenty-three'd* at it. Two things happened simultaneously—the service mechanic from Rholg's Custom-Built Robots walked in and Rupert's head *zokked* against the floor.

Lester sighed and pulled Rupert straight again. "I hope he isn't going

to repeat that courtly gesture anytime someone comes here. I'll have shell-holes all over the living room."

"Has he done that before? That's not good. Remember, all of his basic control units are in his head and a lot of them have just started meshing the new service patterns. He's liable to fracture a bearing and go choo-choo. Like me to take him back to the plant for recalibration?"

"No, I don't have time. I start 'casting in two hours. That reminds me—did your techs build that word-scanner into his forehead?"

The mechanic nodded. "Sure. See that narrow green plate over his eyes? Just flip that to one side or have him do it whenever you want silent written transmission. The words will flow across like on a regular news sign. I came back for the key. Left it stuck in his neck and I'd be in one sweet fix if I got back to the factory without it."

"Take it. I thought you were somebody else." Lester turned to face the dumpy little man in a striped tunic who had just barged in through the open door. "Hello, Mr. Haskell. Would you have a seat? I'll be with you in a moment."

"Give me the key," the mechanic commanded. Rupert pulled the Official Robot Master Key out of the back of his neck and held it out. The mechanic reached for it. Rupert dropped it.

"Well, I'll be—" the man from Rholg's started. "If I didn't know better, I'd swear he did it on purpose." He bent down to retrieve the key.

As his fingers closed over it, Rupert's right hand flicked forward slightly. The man jumped to his feet and sprang backwards through the doorway.

"No you don't!" he snarled. "Did you see what he was trying to do? Why—"

"Three-and-twenty," said Rupert. The door slid shut, cutting off the service mechanic's last statement. The robot came back into the apartment, clacking ever so slightly. His facial expression seemed even sadder than before—some-

how disappointed.

"Two of those Lunar Landing specials," his master told him. He waddled off to prepare them.

"Now look here, Lester," John Haskell boomed in a voice surprising for his size. "I'll come right to the point. I didn't know you were using writers until Green and Anderson told me you'd fired them because they wouldn't take a cut in salary. I go with them when they say they've made you the highest paid comedian in United Americas. Now this show tonight is only an option of a —"

"Wait up, sir. I wrote my own stuff before they came to work for me and they operated entirely from my personal gag files. I fired them because they demanded a higher percentage of my earnings than I got. I can still ad-lib with the best—"

"I don't care whether you ad-lib or whether the stuff comes to you in a dream! I just want laughs on my program to get people in a proper frame of mind to hear my commercials. No, that's not what I mean—oh!" He reached out and grabbed one of the convoluted masses that Rupert had brought in and drained it rapidly. His face didn't even change color. "Not strong enough. Tasteless. Needs stuff."

The robot held the returned and empty receptacle for a moment and studied it. Then he bow-legged it back to the kitchen.

Lester decided that he didn't agree with the president of Star-Gazers, Inc. This drink had *wowie* in every alcoholic drop. But the drinks at the Planet-masters Club where Haskell lived were reputedly powerful.

"All I care about is this," Haskell was saying. "Can you work up a funny program tonight without Green and Anderson or can't you? You may have a high comic rating but you're only as good as your last 'casting—as they say in the industry. If Star-Gazers fail to pick up your thirteen-week option tonight after the trial 'cast for our product, you'll

have to go back to daytime dope operas."

"Sure, Mr. Haskell, sure. But take a look at this script and *then* make your comments." Lester plucked the long sheet of copy out of the electric typewriter and handed it to the little man.

Dangerous, that. It might stink seven ways from Monday. But he hadn't had time to read it himself. Rupert had better be good!

HE WAS, to judge from Haskell's reaction. The president of Star-Gazers had roared himself into the antique swivel-chair and sat there shaking. "Wonderful!" he wiped the tears from his eyes. "Terrific! Almost but not quite, colossal! I apologize, Lester. You don't need any gag-writers, you really do write comedy. Think you can memorize this before the program?"

"Shouldn't be any trouble. I always have to use a little infra-scopolamine for a rush job anyway. And in case I need an ad-lib suddenly I've got my robot."

"Robot? You mean him?" Mr. Haskell gestured to where Rupert stood *whirring* over his shoulder as he stared at the script. He pulled a dark spiral of tubing out of the purple hand, sucked at it.

"Yes, he has a gag file in his mid-section. He'll stand out of camera range and anytime I need a gag I just look at him and the words are spelled out on the forehead scanner. Had it all inserted in my butler-valet combo by the Rholg—Mr. Haskell! What's the matter?"

Haskell had dropped the tube. It lay on the floor, a thin wisp of black smoke steaming out of the open end. "Th-the drink," Haskell said hoarsely. His face, after experimenting with red, green and lavender for a while, compromised and settled on all three in a sort of alternated mottled arrangement. "Where's your—your—"

"In there! Second door to the left!"

The little man scurried off, his body low. He seemed to have lost all of his bones.

"Now what can—" Lester sniffed at the spiral drinking tube. "*A-aargh!*" He was abruptly aware that Rupert was going *whirretty-whirretty-klonk*. "Rupert, what did you put in that drink?"

"He asked for something stronger, more tasty—"

"*What did you put in that drink?*"

The robot considered. "Five parts—(*whizz-clang*)—castor oil to three parts—(*bing-bong*)—worcestershire sauce to—(*tinkle-tinkle-burr-r-r*)—four parts essence of red pepper—(*g-r-rang*)—to one part Cro—"

Lester whistled and the phone leaped into his hand. "Radio Central? Hospital emergency and I mean emerge! Lester the Jester, Artist's Tower, apartment one thousand and six. Hurry!" He ran down the hall to help his guest sit on his stomach.

When the interne saw the brightly-colored mess Haskell was becoming, he shook his head. "Let's get him in the stretcher and out!"

Rupert stood in the corner of the living room as the stretcher, secure in the grip of the interne's beamlock, floated through the door. "Musta been something he et," he clacked.

The interne glared back. "A comedian!"

Lester hurriedly drank three Lunar Landings. He mixed them himself. He had just finished memorizing the so-called ad-lib script with the aid of a heavy dose of infra-scopolamine when Jo breezed in. Rupert opened the door for her. *Clang. Zok.*

"You know, he's been doing this all day," Lester told her as he tugged the robot upright again. "And not only is he adding an original design to my floor but I suspect that he's not helping his bedamned mental processes any. Of course, he's obeyed me completely so far and all of his practical jokes have been aimed at others. . . ."

Rupert rolled something around in his mouth. Then he pursed his lips. Multi-linked wrinkles appeared in his cheeks. He spat.

A brass hexagonal nut bounced against the floor. The three of them stared at it. Finally, Jo raised her head.

"What practical jokes?"

Lester told her.

"*Whew!* You're lucky your contract has a personal immunity clause. Otherwise Haskell could sue you from Patagonia to Nome. But he still won't feel any affection for you, any *real* affection. He'll probably live, though. Get into your costume."

AS LESTER hustled into his spangled red suit in the next room, he called at her, "What're you singing tonight?"

"Why don't you come to a rehearsal sometime and find out?"

"Have to keep up my impromptu reputation. What is it?"

"Oh, 'Subjective Me, Objective You' from Googy Garcia's latest hit—*Love Among the Asteroids*. This robot of yours may write good comedy but he sure is a bust as a butler. The junk he leaves scattered around. Paper, cigarettes, drink-tubes! When I enter your life on a permanent basis, young feller . . ." Her voice died as she bent and began picking up the litter from the floor of the living room. Behind her Rupert meditated at her back. "*Whirr?*" he went.

His right hand flashed up. He came at her fast. He reached her.

"*Yeeee-eeee!*" Jo screamed as she climbed halfway up the opposite wall. She turned as she came down. Her eyes literally cracked.

"Who—what—" she began menacingly. Then she noticed Rupert standing, his hand still out, all of his machinery going *whistle-clong-ka-bankle* all at once.

"Why, he's laughing at me! Think it funny do you, you mechanical masher?" She sped at him in fury, her right hand going far back for a terrific slap.

Lester had torn out of the kitchen when she screamed. Now he saw her hand whistling around in a great arc,

almost at Rupert's face.

"Jo!" he yelled. "Not in the-head!"
Moing-g-g-g-g!

* * * * *

"Think you'll be all right, Miss Lissy," the doctor said. "Just keep your hand in this cast for two weeks. Then we'll X-ray again."

"Let's get started for the studio, Jo," Lester said nervously. "We'll be late. Shame this had to happen."

"Isn't it though? But before I let you accompany me anywhere I want to get one thing straight. You get rid of Rupert."

"But, Jo darling, honey, sweet, do you know what a writer he is?"

"I don't care. I wouldn't think of bringing children up in a home that he infested. According to the Robot Laws you have to keep him at home. I frankly think he's gone dotty in a humorous way. But I don't like it. So—you'll have to choose between me and that gear-happy gagman." She smoothed the cast on her arm as she waited for his reply.

Now Rupert, in his present condition—for all of his eccentricities—meant that Lester's career as a comedian was assured, that never again would he have to worry about material, that he was set for life. On the other hand, he doubted he'd ever meet a woman who was as close to what he wanted in a wife as Jo. She was—well, Lester's ideal—she alone among the girls he knew met his requirements for a successful marriage.

It was a clear choice between money and the woman he loved.

"Well," Lester told Jo at last. "We can still be good friends?"

Jo was finishing her song by the time he arrived at the studio. She didn't even glower at him as she walked away from the camera-mikes. The commercial began.

Lester stationed Rupert against the wall of the control booth where no camera could pick up a view of his

purple body. Then he joined the other actors under the dead camera who were waiting for the end of the commercial before starting their combination drama and comedy.

The announcer came to the end of the last rolling syllable of admiration. The five Gloppus sisters came up for the finale:

"S—G—F, F, C!

Star-Gazer's Fifteen Flavored Cigarettes!

Stay away from tastes like hay!

Days are gay with nasal play,

Star-Gazer's Fifteen Flavored Way!

S—G—F, F, C! From choc-o-late—to cherreeee!"

The camera above Lester sparked colors as he and the actors took over. A simple playlet—romance in a fueling station on Phobos. Lester was extra-neous to the plot—he merely came in with gags from time to time, gags based on some action or line in the straight story.

Good gags tonight—even the program manager was laughing. Well, not laughing—but he *smiled* now and then. And, kiddo, if a program manager smiles, then people all over the Western Hemisphere have collapsed into a cataleptic hysteria. This is a fact as demonstrably certain and changeless as that the third vice-president of a teledar corporation shall always be the butt of the very worst jokes or, as it is known sociologically, the Throttlebottom Effect.

From time to time Lester glanced at his robot. The creature was not staring at him always—that was annoying. He had turned to examine the interior of the control booth through the transparent door which shut it off from the rest of the studio. Lester had removed the narrow green plate from above Rupert's eyes in case an ad-lib were necessary.

ONE was suddenly necessary. The second ingenue worked her way into a line beginning, "So when Harold said he had come to Mars to get away from

militarism and regimentation"—and expired into a frantic "I told him—I told him—um, I had to tell him that—that—" She gaped, snapped her fingers spasmodically as she tried to remember.

Out of camera range, the prompter's fingers flew over the keys of the silent typewriter which projected the entire line on a screen above their heads. Meanwhile there was dead air. Everyone waited for Lester to make a crack that would fill the horrible space.

He spun to his robot. Thankfully he noticed that Rupert was staring at him. Good! Now if he could only meson-filter an ad-lib!

WORDS flowed across the screen on Rupert's forehead. Lester read them off as fast as they appeared.

"Say, Barbara, why don't you tell the station manager to switch from atomics to petroleum?"

"I don't know," she said, feeding the line back like a good straight-man while she memorized the passage she had forgotten. "Why should I tell him to switch from atomics to petroleum?"

From the corner, Rupert roared, "Because there's no fuel like an oil fuel!"

The studio guffawed. Rupert guffawed. Only he sounded as if he were coming apart. All over United Americas, people grabbed at their teledar sets and tried to hold them together as the electronic apparatus *klunked*, *pingled* and *whirrety-whirred*.

Even Lester laughed. *Beautiful! A lot more sophisticated than the crud he'd been getting from Green and Anderson*, yet mixed with the pure old Iowa corn on which all belly-laughter is based. The robot was—

Hey! Rupert hadn't fed him that line—he'd used it himself. People weren't laughing at Lester the Jester—they were laughing at Rupert, even if they couldn't see him. *Hey-y-y!*

When the playlet ended the camera-mikes shifted to Josephine Lissy and the orchestra.

Lester took advantage of the break to

charge up to Rupert. He pointed imperiously at the control booth.

"Get inside, you topper-copper, and don't come out until I'm ready to leave. Save the punch-line for yourself, will you? Bite the hand that oils you? Git, damn you, git!"

Rupert moved back a pace, almost crushing a property man. "*Bing-bing?*" he chuckled inquiringly. "*Honk-beep-erbloogle?*"

"No, I'm not kidding," Lester told him. "Get inside that control booth and stay there!"

With a dragging step that cut a thin groove in the plastic floor, Rupert went off to St. Helena.

Going on with the show, Lester watched him take his place behind the technicians, his shoulders slumped in a dejection the smoothlined 2207 model was never designed to register. From time to time he noticed the robot stride jerkily about the tiny booth, the word-scanner in his forehead making such abortive efforts as "Why is hyperspace like a paperweight?" and "When is a mutant not a mutant?" Lester indignantly ignored these attempts to make amends.

The mid-program commercial—"Have you ever asked yourself," the announcer inquired oilily, "why among the star-blazers it's Star-Gazers one thousand to one? Impartial tests show that these adventurous seekers in empty space always prefer—*what in—*"

Rupert slammed the door shut behind the last of three angry control technicians. Then he began pulling switches. He turned dials.

"He just up and threw us out!"

"That robot's gone psycho! Listen, he can shift the control to the inside of the booth. It's very simple. Is he a talking robot—no, please God!"

"Yeah! He can broadcast himself! Can he talk?"

"Can he!" Lester groaned. "Better blast him out fast!"

"Blast him?" An engineer laughed painfully. "He's locked the door. And

do you know what the doors and walls of that booth are made of? He can stay in there until we get clearance from the IPCC. Which—"

"You know why they call them Star-Gazers, don't you?" Rupert's voice boomed over the teledar speaker which carried through the studio and incidentally all through the western hemisphere. "One puff and you're flat on your back! *Wongle-wangle-ding-ding!* Yes sir, you see stars all right—all colors. You smoke 'em and novas go off in your head. *Gr-r-rung! Ka-bam-ka-blooie!* Fifteen flavors and all of them worth a raspberry! *Zingam-bong—*"

THE walls of the control booth shivered with huge scraping laughter. And not only the walls were shivering.

Jo soothed Lester as best she could.

"He can't go on forever, darling. He's got to stop!"

"Not with that file he has—and that variable modifier—and that meson-filter. I'm through. I'll never 'cast again—they'll never let me in anywhere. And I don't know how to do anything else. No other skills, no other experience. I'm through for life, Jo!"

The engineers finally had to shut off all power in Teledar City. That meant all 'casting stopped, including messages to space-ships and emergency calls to craft on the ground. It meant that elevators in the building stopped between floors, that lights went out in govern-

ment offices all over the tower. Then they were able to open the doors with an auxiliary remote control unit and drag the inert robot out.

When the radiant power was shut off, so was he.

So Lester married Jo. But he didn't live happily ever after. He was barred from teledar for life.

He didn't starve, though. He wished he had from time to time. Because the 'cast that ruined him made Rupert. People wrote in demanding to hear more of this terrific robot who kidded the crass off sponsors. And Star-Gazers tripled their sales. Which, after all, is the ultimate test. . . .

Lester manages Rupert the Rollicking Robot—"The screwiest piece of machinery since the invention of the nut"). He lives with him too, has to by Robot Law. He can't sell him—who'd want to get rid of their only source of bread and marmalade? And he can't hire anyone to take care of Rupert—anyone in his right mind, that is. But worst of all Lester has to live with Rupert. He finds it difficult.

Once a week he visits Jo and his children. He looks very haggard then. Rupert's practical jokes get more complicated all the time.

In fact they've gotten so complex that Lester has a couple of new names along Teledar Row these days. They call him Lester the Pestered. Or Lester the Running Bleeding Fester. Or just plain *Tsk-Tsk*.

AMAZING THING! By Cooper

SENSATIONAL NEW **TING**
CREAM FOR
FOOT ITCH
(ATHLETE'S FOOT)

- REGULAR USE HELPS
RELIEVE ITCHING-SOOTHES
BURNING BETWEEN CRACKED
PEELING TOES -
AIDS HEALING
AMAZINGLY!



FIRST
USED
IN HOSPITALS
NOW
RELEASED TO
DRUGGISTS
GUARANTEED

TING MUST
SATISFY YOU IN
A WEEK-OR
MONEY BACK!



EVEN IF OTHER PRODUCTS
HAVE FAILED TRY AMAZING
TING CREAM TODAY!
GREASELESS, STAINLESS
ALL DRUGGISTS ONLY 60¢ A TUBE.



EARTHLIGHT

by ARTHUR C. CLARKE

I

IF IT weren't for the fact," said Conrad Wheeler morosely, "that it might be considered disrespectful I'd say that the Old Man is completely nuts. And not just slightly touched like the rest of the people I've met on the Moon."

He looked balefully at Sid Jamieson, two years his senior on the staff of the Observatory. The latter grinned good-naturedly and refused to rise to the bait. "When you've known the Old Man as long as I have," he said, "you'll realize he doesn't do anything like this without a very good reason."

"It had better be good! My series of spectrograms was supposed to be finished tonight—and now look at the 'scope!"

The giant dome that housed the thousand-inch reflector was a shambles, or so a casual visitor would have thought. Even the natives were somewhat appalled by the confusion. A small army of technicians was gathered round the base of the great telescope, which was now pointing aimlessly at the zenith. Aimlessly because the dome of the Observatory was closed and sealed against the outer vacuum. It was strange to see men unprotected by space-suits walking over the tessellated floor, to hear voices ringing where normally

no slightest sound could be heard.

High up on a balcony on the far side of the dome the Director was giving orders into a microphone. His voice, enormously amplified, roared from the speakers that had been specially installed for the occasion. "*Mirror crew—stand clear!*"

There was a scurrying round the base of the telescope: then an expectant pause.

"*Lower away!*"

With infinite slowness the great disc of quartz, that had cost a hundred million to make, was lowered from its cell to the strange vehicle beneath the telescope. The ninety-foot-wide truck sank visibly on its scores of tiny ballon tires as it took up the weight of the immense mirror. Then the hoisting gear was released and with a purr of motors the truck and its precious cargo began to move slowly down the ramp leading to the resurfacing room.

It was a breathtaking sight. The men scattered over the floor were utterly dwarfed by the lattice-work of the telescope towering hundreds of feet above them. And the mirror itself, over eighty feet in diameter, seemed like a lake of fire as it reflected the glare of overhead lights. When at last it had left the room it was as though dusk had



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A NOVEL OF THE FUTURE



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suddenly fallen.

"And now they've got to put it back!" grunted Wheeler. "I suppose that will take even longer."

"That's right," said his companion cheerfully. "Much longer. Why, last time we resurfaced the mirror—" The amplifiers drowned his voice.

"Four hours twenty-six minutes," remarked the Director in a fifty-watt aside. "Not too bad. Okay—get her back and carry on."

THERE was a click as he switched off the microphone. In a strained and hostile silence the observatory staff watched his small rather plump figure leave the balcony. After a discreet interval someone said, "Damn!" in a very determined voice. The assistant chief computer did a wicked thing. She lit a cigarette and threw the ash on the sacred floor.

"Well!" exploded Wheeler. "He might have told us what it was all about! It's bad enough to stop the work of the whole observatory while we get the big mirror out when it's not due for resurfacing for months. But to tell us to put the blasted thing back as soon as we've dismounted it, without a word of explanation . . ." He left the sentence in mid-air and looked at his companion for support.

"Take it easy," said Jamieson with a grin. "The Old Man's not cracked and you know it. Therefore he's got a good reason for what he's doing. Also he's not the secretive sort—therefore he's keeping quiet because he has to. And there must be a *very* good reason for risking the near-mutiny he's got on his hands now. Orders from Earth, I'd say. One doesn't interrupt a research program like ours just for a whim. Hello, here comes Old Mole—what's he got to say?"

"Old Mole"—alias Dr. Robert Molton—came trotting towards them, carrying the inevitable pile of photographs. He was probably the only member of the observatory staff who even remotely re-

sembled the popular conception of an astronomer. All the rest, one could see at a glance, were businessmen, undergraduates of the athletic rather than the intellectual type, artists, prosperous bookmakers, journalists or rising young politicians. Anything but astronomers.

Dr. Molton was the exception that proved the rule. He looked out at the world and his beloved photographic plates through thick rimless lenses. His clothes were always just a little too tidy and never less than ten years out of date—though incongruously enough his ideas and interests were often not only modern, but years ahead of the times.

He was very partial to boutonnières—but as the indigenous lunar vegetation gave him little scope in this direction he had to content himself with a somewhat restricted collection of artificial flowers imported from Earth.

These he varied with such ingenuity and resource that the rest of the staff had spent a good deal of fruitless effort trying to discover the laws governing their order of appearance. Indeed, a very famous mathematician had once lost a considerable sum of money because one day Old Mole appeared wearing a carnation rather than the rose advanced statistical theory had predicted.

"Hello, Doc," said Wheeler. "What's it all about? *You* ought to know!"

The old man paused and looked at the young astronomer doubtfully. He was never sure whether or not Wheeler was pulling his leg and usually assumed correctly that he was. Not that he minded, for he possessed a dry sense of humor and got on well with the numerous youngsters in the Observatory. Perhaps they reminded him of the time, a generation ago, when he too had been young and full of ambition.

"Why should I know? Professor Maclaurin doesn't usually confide his intentions to me."

"But surely you've got your theories?"

"I have but they won't be popular."

"Good old Doc! We knew you wouldn't let us down!"

The old astronomer turned to look at the telescope. Already the mirror was in position beneath its cell, ready to be hoisted back.

"Twenty years ago the last Director, van Haarden, got that mirror out in a hurry and rushed it to the vaults. He didn't have time for a rehearsal. Professor MacLaurin has."

"Surely you don't mean . . .?"

"In Ninety-five, as you should know

the moons of Jupiter and Saturn are the finest brains in the Solar System, fired with all the pride and the sense of power that the crossing of real space has given to man.

"They're not like us Earthbound planet-grubbers. Oh, I know we're on the Moon and all that but what's the Moon now but Earth's attic? Forty years ago it was the frontier and men risked their lives reaching it—but today the theater in Tycho City holds two thousand!

Man Is Here to Stay

THE late Mr. William Olaf Stapledon, summing up his speculations on whether or not humanity would ever reach alien planets, in his justly famed lecture before the British Interplanetary Society some two years ago that people would have to adapt to new environments rather than the reverse.

He based his hopes for expansion throughout the Solar System on planned biological specialization rather than on human ability to adapt life on, say, Mars or Venus to human habitation by tailoring the planets to fit via machines. In other words Stapledon believed that we were going to have to breed special species of humans in simulated alien conditions if any of us were to survive at all on other planets.

Now, in this story, the secretary of that same learned British society, Mr. Arthur C. Clarke, takes an exactly opposite viewpoint. In his story humanity has successfully colonized not only the Moon, Venus and Mars but is established on the moons of Jupiter and Saturn and is preparing to move in upon the icy outer planets themselves. Furthermore, in Mr. Clarke's story, people have done this without ceasing to be people through controlled mutation. And the problem which they find themselves up against is a very human one indeed.

We wonder which of these men the future will prove right!

—THE EDITOR.

but probably don't, the Government was having its first squabble with the Venus Administration. Things were so bad that for a time we expected an attempt to seize the Moon. Not war, of course, but too close an approximation to be comfortable. Well, that mirror is the human race's most valuable single possession and van Haarden was taking no risks with it. Nor, I think, is MacLaurin."

"But that's ridiculous! We've had peace for more than half a century. Surely you don't think that the Federation would be mad enough to start anything?"

"Who knows just what the Federation is up to? It's dealing with the most dangerous commodity in the universe—human idealism. Out there on Mars and

"The real frontier's out beyond Uranus and it won't be long before Pluto and Persephone are inside it—if they've not been reached already. Then the Federation will have to spend its energies elsewhere and it will think about reforming Earth. That's what the Government's afraid of."

"Well, and we never knew you were interested in politics! Sid, fetch the Doctor his soap-box."

"Don't take any notice of him, Doc," said Jamieson. "Let's have the rest of your ideas. After all, we're on quite good terms with the Federation. Their last scientific delegation left only a few months ago and a darn nice crowd they were too. I got an invitation to Mars I want to use as soon as the Director will let me go. You don't think they

would declare war, or anything crazy like that? What good would it do to smash up Earth?"

"The Federation's much too sensible to try anything of the sort. Remember, I said they were idealists. But they may feel that Earth hasn't been taking them seriously enough and that's the one thing that reformers can't tolerate. However, the main cause of trouble is this haggling over the uranium supply."

"I don't see what that's got to do with us," said Wheeler. "If there is a fight I hope they leave the Moon out of it."

MOLTON said thoughtfully, "Haven't you heard?"

"Heard what?" asked Wheeler, an uncomfortable sensation creeping up his spine.

"They say uranium has been found on the Moon at last."

"That story! It's been going around for years."

"I think there's something in it this time. I've had it from pretty reliable sources."

"So have I," put in Jamieson unexpectedly. "Isn't it something to do with Johnstone's theory of satellite formation?"

"Yes. You know Earth's the only planet with any appreciable uranium—it's connected in some way with its abnormally high density. Most of the uranium's a thousand miles down in the core where no one can get at it. But when the Moon split off it took some of the core with it—and the remnant's quite close to the surface here. The story's going round that it's been detected by lowering counters down drill-holes and they've found enough uranium to make all the deposits on Earth look like very small stuff."

"I see," said Wheeler slowly. "If that's true the Federation will be asking for increased supplies."

"And those nervous old women down on Earth will be afraid to let them have any," interjected Jamieson.

"Well, why should they?"

"Surely that's easy enough to answer. Earth's requirements are static—while the Federation's are increasing with each new planet that's colonized."

"And you think the Federation might try to grab any lunar deposits before Earth could get there?"

"Exactly—and if we are in the way we might get hurt. That would upset both sides very much but it wouldn't be much compensation to us."

"This is just what used to happen a hundred and fifty years ago back on Earth, when gold and diamonds were valuable. Claim-jumping, they used to call it. Funny thing, history."

"But supposing the Federation *did* seize a bit of the Moon—how could they hold it so far from their bases? Remember, there aren't any weapons left nowadays."

"With the legacy of the two World Wars it wouldn't take long to make some, would it? Most of the finest scientists in the Solar System belong to the Federation. Suppose they took a big space-ship and put guns or rocket torpedoes on it. They could grab the whole Moon and Earth couldn't push them off. Especially when they'd got hold of the uranium and cut off Earth's supplies."

"You should be writing science fiction, Doc! Battleships of Space and all that sort of thing! Don't forget to bring in the death-rays!"

"It's all right for you to laugh but you know perfectly well that with atomic power it is possible to put enough energy into a beam to do real damage. No one's tried it yet as far as we know—because there wasn't much point. But if they ever want to . . ."

"He's right, Con. How do we know what's been going on in the Government labs for the last generation? I hadn't thought about it before but it rather frightens me. You *do* think of the nicest things, Doc."

"Well, you asked for my theories and you've got 'em. But I can't stand here all day talking. *Some* people in this establishment have work to do." The

old astronomer picked up his plates and wandered off toward his office, leaving the two friends in a somewhat disturbed frame of mind.

Jamieson gazed glumly at the telescope while Wheeler looked thoughtfully at the lunar landscape outside the dome. He ran his fingers idly along the transparent plastic of the great curving wall. It always gave him a thrill to think of the pressures that wall was withstanding—and the uncomfortable things that would happen if it ever gave way.

The view from the Observatory was famous throughout the entire Solar System. The plateau on which it had been built was one of the highest points in the great lunar mountain range which the early astronomers had called the Alps. To the south the vast plain so inappropriately named the *Mare Imbrium*—Sea of Rains—stretched as far as the eye could reach.

To the southeast the solitary peak of the volcanic mountain Pico jutted above the horizon. East and west ran the Alps, merging on the eastern side of the Observatory into the walled plain of Plato. It was nearly midnight and the whole vast panorama was lit by the brilliant silver light of the full Earth.

WHEELER was just turning away when the flash of rockets far out across the Sea of Rains attracted his notice. Officially no ship was supposed to fly over the northern hemisphere, for the brilliant glare of a rocket exhaust could ruin in a second an exposure that might have taken hours, even days, to make. But the ban was not always obeyed, much to the annoyance of the observatory directorate.

"Wonder who that blighter is?" growled Wheeler. "I sometimes wish we did have some guns on the Moon. Then we could shoot down trippers who try to wreck our program."

"I call that a really charitable thought. Maybe Tech Stores can fix you up—they keep everything."

"Except what you happen to want. I've been trying to get a Hilger magnitude tabulator for the last month. 'Sorry, Mr. Wheeler, might be on the next consignment.' I'd see the Director about it if I weren't in his bad books."

Jamieson laughed. "Well, if you must compose somewhat — er — personal limericks better not type them out next time. Stick to the old oral tradition like the ancient troubadours—it's much safer. Hello, what's he up to?"

The last remark was prompted by the maneuvers of the distant ship. It was losing height steadily, its main drive cut off, only the vertical jets cushioning its fall.

"He's going to land! Must be in trouble!"

"No—he's quite safe. Oh, *very* pretty! That pilot knows his stuff!"

Slowly the ship fell out of sight below the rim of the mountains, still keeping on a level keel.

"He's down safely. If he's not there'll be a record fireworks display in just about ten seconds and we'll feel the shock over here."

With a mingling of anxiety and morbid expectation the two men waited for a minute, eyes fixed on the horizon. Then they relaxed. There had been no distant explosion, no trembling of the ground underfoot.

"All the same, he may be in trouble. We'd better ask Signals to give him a call."

"Okay—let's go."

The observatory transmitter, when they reached it, was already in action. Someone else had reported a ship down beyond Pico and the operator was calling it on the general lunar frequency. "Hello, ship landing near Pico—this is Astron calling. Are you receiving me? Over."

The reply came after a considerable interval, during which the call was repeated several times. "Hello, Astron, receiving you clearly. Pass your message please. Over."

"Do you need any assistance? Over."

"No thank you. None at all. Out."

"Okay. Astron out."

The operator switched off his carrier and turned to the others with a gesture of annoyance. "That's a nice polite answer for you! Translated into English it means 'Mind your own business. I won't give you my call sign. Good-day.'"

"Who do you think he is?"

"No doubt about it. Government ship."

Jamieson and Wheeler looked at each other with a simultaneous surmise. "Maybe the doc was right, after all."

Wheeler nodded in assent. "Mark my words, pardner," he said, "there's uranium in them thar hills. And I wish there weren't!"

II

DURING the next two weeks ship after ship dropped down beyond Pico and, after an initial outburst of speculation, the astronomers ceased to comment on the sight. Quite obviously something important was going on out in the Sea and the theory of the uranium mine was generally accepted because nobody could think of a better.

Presently the Observatory staff began to take their energetic neighbors for granted and forgot about them except when rocket glare fogged important photographic plates. Then they went storming in to see the Director, who calmed them down as best he could and promised to make the appropriate representations in the proper quarters.

With the coming of the long lunar day Jamieson and Wheeler settled down to the tedious work of analyzing the data they had collected during the night. It would be fourteen days before they saw the stars again and could make any further observations. There was plenty to do, for an astronomer spends only a very small portion of his time actually working with his instruments. The most important part of his

life is spent sitting at a desk piled with sheets of paper, which rapidly become covered with mathematical calculations or doodles, according to the flow of inspiration.

Though both Wheeler and Jamieson were young and keen, an unbroken week of this was quite enough for them. In the slow cycle of lunar time it was generally realized that tempers began to get frayed around midday and from then until just before nightfall there was usually something of an exodus from the Observatory.

It was Wheeler who suggested they take one of the observatory tractors and head toward Pico on a voyage of exploration. Jamieson thought it was an excellent scheme though the idea was not as novel to him as to his friend. Trips out into the Sea of Rains were a popular diversion among the astronomers when they felt they had to get away from their colleagues.

There was always the chance of finding something interesting in the way of minerals or vegetation but the main attraction was the superb scenery. Also there was a certain amount of adventure and even danger about the enterprise that gave it an additional charm. Not a few tractors had been lost and although rigorous safety precautions were enforced there was always a chance that something might go wrong.

The almost complete absence of any atmosphere on the Moon had made economical flying impossible since rockets could not be used for journeys of only a few score miles. So practically all short-range lunar travel was done in the powerful electric tractors universally known as *Caterpillars* or, more briefly, "cats."

They were really small space-ships mounted on broad tracks that enabled them to go anywhere within reason, even over the appallingly jagged surface of the Moon. On fairly smooth terrain they could do up to eighty miles an hour but normally they were lucky to manage half that speed. The low grav-

ity enabled them to climb fantastic slopes and they could if necessary haul themselves out of vertical pits by means of their built-in winches. One could live in the larger models for months at a time in reasonable comfort.

Jamieson was a more-than-expert driver and knew the road down the mountains perfectly. As lunar highways went it was one of the best and carried a good deal of traffic between the Observatory and the port of Aristillus. Nevertheless for the first hour Wheeler felt that his hair would never lie down again.

It usually took newcomers to the Moon a long time to realize that slopes of one-in-one were perfectly safe if treated with respect. Perhaps it was just as well that Wheeler was a novice for Jamieson's technique was so unorthodox that it would have filled a more experienced passenger with real alarm.

Why Jamieson was such a desperate driver was a paradox that had caused much discussion among his colleagues. Normally he was painstaking and careful, even languid in his movements. No one had ever seen him really annoyed or excited. Many people thought him lazy but that was a libel. He would spend weeks working out a theory until it was absolutely watertight—and then would put it away for two or three months to have another look at it later.

YET once at the controls of a cat this quiet and peace-loving astronomer became a daredevil driver who held the unofficial record for almost every tractor drive in the northern hemisphere. More than likely the explanation lay in a boyhood desire to be a space-ship pilot, a dream that had been foiled by physical disability.

They shot down the last foothills of the Alps and out into the Sea of Rains like a miniature avalanche. Now that they were on lower ground Wheeler began to breathe again, thankful to have left the vertiginous slopes behind.

He was not so pleased when with a colossal crash Jamieson drove the tractor off the road and out into the barren plain.

"Hey, where are you going?" he cried.

Jamieson laughed at his consternation. "This is where the rough stuff begins. The road goes southwest to Aristillus here and we want to get to Pico. So from now on we're in country where only half a dozen tractors have ever been before. To cheer you up I might say Ferdinand is one of them."

"Ferdinand" was now plunging ahead at twenty miles an hour with a swaying motion Wheeler found rather disconcerting. If he had lived in an age that had known of ships he might have been familiar with it.

The view was disappointing, as it always is at "sea" level on the Moon, owing to the nearness of the horizon. Pico and all the more distant mountains had sunk below the skyline and the plain ahead looked uninviting as it lay in the blazing sun. For three hours they forged steadily across it, passing tiny craterlets and yawning crevasses that seemed of indefinite depth.

Once Jamieson stopped the tractor and the two men went out in their space-suits to have a look at a particularly fine specimen. It was about a mile wide and the Sun, now nearly at the zenith, was shining straight into it. The bottom was quite flat as though, when the rock had split, lava had flowed in from the depths beneath and solidified. Wheeler found it very difficult to judge just how far away the floor was.

Jamieson's voice came over the suit radio. "See those rocks down there?"

The other strained his eyes and could barely make out a few markings on the apparently smooth surface far below.

"Yes, I think I see the ones you mean. What about them?"

"How big would you say they are?"

"Oh, I don't know—maybe a yard across."

"Himm. See the smaller one near the side?"

"Yes."

"Well, that isn't a rock. That was a tractor that missed the bend."

"Good Lord! How? It's plain enough."

"Yes, but this is midday. Toward evening, when the Sun's low, it's the easiest thing in the world to mistake a shadow for a crevasse—and the other way round."

Wheeler was very quiet as they walked back to their machine. Perhaps, after all, they had been safer in the mountains.

At length the great rock mass of Pico came once more into sight until presently it dominated the landscape. One of the most famous landmarks on the Moon it rose sheer out of the Sea of Rains, from which, ages ago, volcanic action had extruded it. On Earth it would have been completely unclimbable. Even under one-sixth of Earth's gravity only two men had ever reached its summit. One of them was still there.

Moving slowly over the jagged terrain the tractor skirted the flanks of the mountain. Jamieson was searching for a place where the cliffs could be scaled so they could get a good view out over the Sea. After traveling several miles he found a spot that met with his approval.

"Climb those cliffs? Not on your life!" expostulated Wheeler when Jamieson explained his plan of action. "Why, they're practically vertical and half a mile high!"

"Don't exaggerate," retorted the other. "They're quite ten degrees from the vertical. And it's so easy to climb here, even in a suit. We'll be tied together and if one of us falls the other can still pull him up with one hand. You don't know what it's like until you've tried."

"That's true of all forms of suicide. Oh, all right—I'm game if you are."

Reluctantly Wheeler climbed into his space-suit and followed his friend through the airlock. Jamieson was carrying a small telescope, a long nylon rope and other climbing equipment,

which he draped around Wheeler on the pretext that, as he would have to go ahead, his hands had better be free.

Seen from close quarters the cliffs were even more forbidding. They seemed not merely vertical but overhanging and Wheeler wondered how his friend intended to tackle them. Secretly he hoped the whole campaign would be called off.

IT WAS not to be. After a brief survey of the rock face Jamieson tied one end of the rope around his waist and, with a short run, leaped toward a projection thirty feet up the face of the cliff. He caught it with one hand, transferred his grip to the other and hung for a while, admiring the view. Since he weighed only forty pounds with all his equipment this was not as impressive a performance as it would have been on Earth. However, it served its purpose of reassuring Wheeler.

After a while Jamieson grew tired of hanging by one arm and brought the other into action. With incredible speed he clambered up the face of the cliff until he was fully a hundred feet above the ground. Here he found a ledge that was to his liking as it was every bit of twelve inches wide and enabled him to lean back against the rock face.

He switched on his headset and called down. "Hello, Con! Ready to come up?"

"Yes. What do you want me to do?"

"Is the rope tied around you?"

"Just a minute. Okay."

"Right! Up we go!"

Jamieson started to haul in the rope and grinned at the other's sudden exclamation of surprise as he found himself hoisted unceremoniously into the air. When he had been lifted twenty or thirty feet Wheeler recovered his poise and began to climb the rope himself, so that as a result of their joint efforts it was only a few seconds before he had reached the ledge.

"Easy enough, isn't it?"

"So far—but it still looks a long way."

"Then just keep on climbing and don't bother to look. Hold on here until I call you again. Don't move until I'm ready—you're my anchor in case I fall."

After half an hour Wheeler was amazed to find how far they had risen. The tractor was no more than a toy at the foot of the cliffs and the horizon was many miles away. Jamieson decided they were high enough and began to survey the plain with his telescope. It was not long before he found the object of their search.

About ten miles away the largest space-ship either of them had ever seen lay with the sunshine glinting on its sides. Close to it was an enormous hemispherical structure rising out of the level plain. Through the telescope men and machines could be seen moving around its base. From time to time clouds of dust shot into the sky and fell back to the ground again as if blasting were in progress.

"Well, there's your mine," said Wheeler after a long scrutiny.

"It doesn't look much like a mine to me," replied the other. "I've never seen a lunar mine covered over like that. It almost looks as if a rival observatory is starting up. Maybe we're going to be driven out of business."

"We can reach it in half an hour, whatever it is. Shall we go over to have a look?"

"I don't think it would be a very wise thing to do. They might insist on our staying."

"Hang it all, there isn't a war on yet and they'd have no right to detain us. The Director knows where we are and would raise hell if we didn't come back."

"Not in your case, my lad. However, I guess you're right. They can only shoot us. Let's go."

Climbing down the cliff, unlike a similar operation on Earth, was easier than going up it. Each took turns lowering the other to the full length of the rope, then scrambling down the cliff face himself, knowing that even if he slipped

the other could easily check his fall. In a remarkably short time they had reached level ground again and the faithful Ferdinand set out once more across the plain.

AN HOUR later, having been delayed by a slight mistake in bearings for which each blamed the other, they found the dome ahead of them and bore down upon it at full speed, after first calling the Observatory on their private wave length and explaining exactly what they intended to do. They rang off before anyone could tell them not to.

It was amusing to watch the commotion their arrival caused. Jamieson thought it resembled nothing so much as an ant heap that had been well stirred with a stick. In a very short time they found themselves surrounded by tractors, hauling machines and excited men in space-suits. They were forced by the sheer congestion to bring Ferdinand to a halt.

"I suppose we had better wait for the reception committee," said Wheeler. "Ah, here it comes!"

A small man who managed to convey an air of importance even in a space-suit was forcing his way through the crowd. Presently there came a peremptory series of knocks on the outer door of the airlock. Jamieson pressed the button that opened the seal and a moment later the "reception committee" was removing his helmet in the cabin.

He was an elderly sharp-featured man and he did not seem in a particularly good temper. "What are you doing here?" he snapped as soon as he had escaped from the confines of his suit.

Jamieson affected surprise at such an unreasonable attitude. "We saw you were newcomers around here, so we came over to see how you were getting on."

"Who are you?"

"We're from the Observatory. This is Mr. Wheeler—I'm Dr. Jamieson. Both astrophysicists."

"Oh!" There was a sudden change in the atmosphere. The reception committee became quite friendly. "Well, you'd better both come along to the office while we check your credentials."

"I beg your pardon? Since when has this part of the Moon been restricted territory?"

"Sorry, but that's the way it is. Come along, please."

The two astronomers climbed into their suits and followed the other through the lock. Wheeler was beginning to feel a trifle worried and rather wished he had not suggested making this visit. Already he was visualizing all sorts of unpleasant possibilities. Recollections of what he had read about spies, solitary confinement and brick walls at dawn rose up to cheer him.

One of his most valuable assets as a theoretical scientist was his powerful imagination but there were times when he felt that he could do without it. Quite a large portion of his life was spent worrying about things which might happen as a result of the scrapes into which he was continually getting. This looked as if it might be one of them.

Outside the crowd was still gathered around their tractor but it rapidly dispersed as their guide gave instructions over his radio which Jamieson and Wheeler, tuned to the Observatory wave length, were unable to hear.

They were led to a smoothly-fitting door in the wall of the great dome and found themselves inside the space formed by the outer wall and an inner, concentric hemisphere. The two shells, as far as could be seen, were spaced apart by an intricate webbing of transparent plastic. Even the floor underfoot was made of the same substance. Looking at it closely, Wheeler came to the conclusion that it was some kind of electrical insulator.

Their guide hurried them along at almost a trot, as if he did not wish them to see more than necessary. They entered the inner dome through a small

airlock, where they removed their suits. Wheeler wondered glumly when they would be allowed to retrieve them.

III

THERE was a smell in the air that they did not at once recognize, in spite of its familiarity. Jamieson was the first to identify it. "Ozone!" he whispered to his companion, who nodded in agreement. He was going to add a remark about high voltage equipment when their guide looked back suspiciously and he desisted.

The airlock opened into a small corridor flanked by doors bearing painted numbers and such labels as *Private*, *Keep Out! Technical Staff Only*, *Dr. Jones, Typists and Director*. At the last they came to a halt.

After a short pause a *Come In* panel glowed and the door swung automatically open. Ahead lay a perfectly ordinary office dominated by a determined-looking young man behind a very large desk. "Hello—who are these people?" he asked as his visitors entered.

"Two astronomers from the Observatory. They just dropped in by tractor. I thought we had better check up on them."

"Most certainly. Your names, please?"

There followed a tedious quarter of an hour while the Director took down particulars and finally called the Observatory. Jamieson and Wheeler breathed a sigh of relief when it was all over and everyone was satisfied that they were in fact themselves.

The young man at the imposing desk switched off the radio and regarded the two interlopers with some perplexity. Presently his brow cleared and he began to address them.

"You realize, of course, that you are a bit of a nuisance. This is about the last place we ever expected visitors, otherwise we should have put up notices telling them to clear off. Needless to say we have means of detecting them

when they do arrive—even when they don't drive up openly as you were sensible enough to do.

"Anyway, here you are and no harm done. You have probably guessed that this is a Government project, one that we don't want talked about. Now you are here I suppose I had better explain to you what it is—but I want your word of honor not to repeat what I tell you."

The two astronomers, feeling rather sheepish, assented.

"As you know radio communication to the outer planets is carried out in stages and not by direct point-to-point transmission. If we want to send a message to Titan it has to go, for example, Earth-Mars-Callisto-Titan, with repeater stations and all their masses of equipment at each leg of the journey. We want to do away with all that. This is going to be Communications Center for the entire Solar System and from here we can call any planet direct."

"Even Persephone when they get there?"

"Yes."

"One in the eye for the Federation, won't it be? They own all the relay stations outside Earth."

The Director looked at Wheeler sharply. "Well, I don't suppose they'll like it at first," he admitted. "But in the long run it will reduce costs and give everyone a much better service."

"The secrecy, I suppose, is to prevent the Federation thinking of the idea first?"

The Director looked a little embarrassed and refused to answer directly. He rose, made a gesture of dismissal. "Well, that's all, gentlemen. I hope you have a pleasant trip back to the Alps. And please ask your friends to keep away."

"Thanks for being so frank with us," said Jamieson as they turned to go. "We'll keep it to ourselves. But we're glad to know the truth, as there are so many rumors flying round nowadays."

"Such as?"

"To be perfectly honest we thought

this might be the mythical uranium mine there's been so much talk about."

The Director laughed easily. "Doesn't look much like a mine, does it?"

"It certainly doesn't. Well, good-bye."

"Good-bye."

The Director remained standing in moody silence for a while after Jamieson and Wheeler had left the room. Then he pressed the buzzer for his secretary. "You've recorded that?"

"Yes."

"They're nice chaps. I feel rather ashamed of myself. But if we just sent them away they'd start discussing us with their colleagues—and they might hit on the truth. Now that they think they know it their curiosity will be satisfied and they won't talk, especially since I've asked them not to and they're the sort who'll respect a promise. A dirty trick but I think it will work."

The secretary looked at his chief with a new respect. "You know, Chief, there are times when you remind me of that old Roman politician—you know the chap I mean."

"Machiavelli, I suppose—though he was a bit later than the Romans. By the way, did the screens detect them all right when they came in?"

"Yes—the alarms went off in plenty of time."

"Good! Then there's no need to increase our precautions. The only other step we could take is to publicly announce that this part of the Moon is tabu—and the last thing we want to do is to attract attention."

"What about the people at the Observatory? There may be more visitors."

"We'll call up Maclaurin again and ask him to discourage these private expeditions. He's a touchy old bird but I think he'll play. Now let's get on with that progress report."

JAMIESON and Wheeler did not return directly to the Observatory, for they were not expected back for a couple of days and there was still a lot

of the Moon to explore. Their visit to the dome, they felt, had been something of an anticlimax. It was true that they were sharing a secret and that was always exciting but they could not pretend it was a very spectacular secret.

"Well, where do we go from here?" asked Wheeler when the dome had dropped out of sight below the horizon.

Jamieson produced a large-scale photographic map of the *Mare Imbrium* and pinned it down with his forefinger.

"This is where we are now," he said. "I'm going on a circular tour that will really show you some lunar scenery. The *Sinus Iridum's* just two hundred miles east over quite good terrain and I'm heading for that. When we get there we'll go north until we reach the edge of the plain, and then follow the mountains back to the Observatory. We'll be home tomorrow or the next day."

For nearly four hours uneventful landscape flowed past the windows as Jamieson drove the tractor across the Sea. From time to time they passed low ridges and small craters only a few hundred feet high but for the greater part of their journey the terrain was almost flat.

After a while Wheeler ceased to take much notice of it and tried to do some reading but the jolting of the machine made it very uncomfortable and he soon gave up the attempt. In any case the only book in the tractor was Maclaurin's *Studies in the Dynamics of Multiple Star Systems* and this was supposed to be a holiday after all.

"Sid," began Wheeler abruptly. "What do you think about the Federation? You've met a lot of their people."

"Yes and liked them. Pity you weren't here when the last crowd left. We had about a dozen of them at the Observatory, studying the telescope mounting. They're thinking of building a fifteen-hundred-inch reflector on one of the moons of Saturn, you know."

"That would be some job—I always

said we were too close to the Sun here. But to get back to the argument—did they strike you as likely to start a quarrel with Earth?"

"It's difficult to say. They were very open and friendly with us but then we were all scientists together and that helps a lot. It might have been different if we'd been politicians or civil servants."

"Dammit, we *are* civil servants! Who pays our salaries?"

"Yes but you know what I mean. I could tell that they didn't care a lot for Earth though they were too polite to say so. There's no doubt that they're annoyed about the uranium allocation—I often heard them complain about it. Their main point was that they *had* to have atomic power to open up the cold outer planets and that Earth could manage quite easily with alternative sources of energy. After all, she's done so for a good many thousand years."

"Which side do you think is right?"

"I don't know. But I will say this—if more uranium does turn up and Earth doesn't let the Federation have a bigger share of it, then we shall be in the wrong."

"I don't think that's likely to happen."

"Don't be so sure. As old Mole said, there are a lot of people on Earth who are afraid of the Federation and don't want to give it any more power. The Federation knows that and it may grab first and argue afterwards."

"Hm. Then it's nice to know that our friends out by Pico aren't mining the stuff, after all," said Wheeler thoughtfully. "*Ouch*—was that necessary?"

"Sorry. But if you will keep me talking you can't expect me to avoid all the cracks. Looks as though the suspension wants adjusting. I'll have to turn Ferdie in for an overhaul when we get back. Ah, that's Mount Helicon coming up over there. No talking while I concentrate on the driving for the next few miles—the next section's a bit tricky."

The tractor turned northward and

slowly the great wall of the beautiful *Sinus Iridum*—the Bay of Rainbows—rose over the horizon until it stretched east and west as far as the eye could see. So overwhelming was the sight that Wheeler was voluntarily silent and sat for the next twenty miles without a word while Jamieson drove the machine toward the three-mile-high cliffs ahead.

He remembered his first glimpse of the *Sinus Iridum* through a two-inch telescope on Earth many years ago—it seemed scarcely possible that now he was actually skirting its towering walls. What unbelievable changes the twentieth century had brought! It needed a considerable effort to realize that at its beginning man had not even possessed flying machines, still less dreamed of crossing space.

The history of two thousand years seemed to have been crowded into the single century with its vast technical achievements and two tremendous wars. In its first half the air had been conquered more thoroughly than had the sea in all the millennia before.

In its closing quarter the first crude rockets had reached the Moon and the age-long isolation of the human race had ended. Within a single generation there were children to whom the word "home" no longer conveyed the green fields and blue skies of Earth, so swift had been the colonization of the inner planets.

HISTORY, it has been said, never repeats itself but historical situations recur. Inevitably the new worlds began to loosen their ties with Earth. Their populations were still very small compared with those of the mother world but they contained the most brilliant and active minds the race possessed. Free at last from the crushing burden of tradition they planned to build civilizations which would avoid the mistakes of the past. The aim was a noble one—it might yet succeed.

Venus had been the first world to

declare its independence and set up a separate government. For a little while there had been considerable tension but good sense had prevailed and since the beginning of the twenty-first century only minor disagreements had disturbed relations between the two governments. Ten years later Mars and the four inhabited moons of Jupiter—Io, Europa, Ganymede and Callisto—had formed the union which was later to become the Federation of the Outer Planets.

Wheeler had never been to any of these outer worlds. Indeed this was the first time he had even left his native Earth. Like most terrestrials he was a little scared of the Federation though the scientist in him made him admire many of its achievements. He did not believe in the possibility of war but if there were "incidents"—as earlier statesmen would have put it—his loyalties lay with Earth.

The tractor rolled to a halt and Jamieson got up from the controls, stretching himself mightily. "Well, that's enough for today. Let's have some food before I turn cannibal."

One corner of the tractor was fitted up as a tiny galley but the two explorers were much too lazy to use it and had been living entirely on meals already prepared in the Observatory, which could be heated at the turn of a switch. They did not believe in unnecessary hardships. If a psychologist had examined the machine's stores he would have been convinced that its passengers suffered from an almost pathological fear of starvation.

Since it was always daylight they slept, ate, argued and drove whenever the spirit moved them. For nearly thirty hours they worked their way slowly along the foot of the Bay's mighty cliffs, pausing now and then to don space-suits and carry out explorations on foot. They found little but minerals, although Wheeler was greatly excited by the discovery of a peculiar red moss his friend had never seen before.

So little of the Moon had been explored in detail that it was quite possibly new to science and Wheeler pictured himself receiving all kinds of honors from the botanical world. These hopes were rudely shattered by the staff biologist a couple of days later but they were enjoyable while they lasted.

The Sun was still high when they were once again on the Alpine slopes though noon was long past and the thin rim of the crescent Earth was visible in the sky. Wheeler had enjoyed the trip but was getting tired of the cramped quarters. Also he was becoming more and more aware of accumulated aches and pains caused by the bumping of the vehicle over the worst ground any machine could possibly travel.

It was pleasant to get back to the bustle of life in the common-room, even though the same ancient magazines were displayed and the same people were monopolizing the best chairs. Very little had happened, it seemed, during their short absence.

The main topic of conversation was the complete breaking off of diplomatic relations between the Director's young and extremely pretty private secretary and the chief engineer, generally supposed to be her most favored suitor. This quite outshadowed more important items such as the recent discovery, by an incredible feat of mathematics, that van Haarden's planet possessed a system of rings like that of Saturn.

And not until they had heard the first news broadcast from Earth did Wheeler and Jamieson learn that the Federation's latest request for reconsideration of the uranium agreement had been received and rejected. "That will make old Mole excited," commented Wheeler.

"Yes—who would have thought the old boy took such an interest in politics. Let's have a word with him."

The old astronomer was in the far corner of the room, talking volubly with one of the junior physicists. He broke off when he saw the newcomers. "So

you're back. I thought you would break your necks out in the *Mare*. Seen any mooncalves? "

The references to H. G. Wells' fabulous beasts was a lunar joke of such long standing that many terrestrials took it quite seriously and thought the creatures actually existed.

"No, or we would have brought one back for the menu. How are things going?"

"Nothing out of the ordinary as far as I'm concerned. But Reynolds here thinks he has found something."

"Think—I *know*! Two hours ago all my recorders went haywire and I'm still trying to find what has happened."

"Which recorders?"

"The magnetic field strength meters. Usually the field is pretty constant except when there is a magnetic storm and we always know when to expect those. But today all the indicators have gone clean off the graph paper and I've been running around the Observatory to find if anyone has switched on something outside in the way of electromagnets. I've eliminated everything, so it must be external. It's still on and Jones is trying to get a bearing on it while I come up for a breather."

"Sure it's not a storm? You could find out from Earth—it would have hit them too."

"I checked on that—in any case there has been no unusual solar activity so that's ruled out. Also it's far too intense and it *must* be man-made for it keeps going on and off abruptly. Just as if someone's working a switch."

"Sounds very mysterious. Ah, here's Jones. By the look of him I'd say the Welsh Wonder has found something."

ANOTHER physicist had just hurried into the room, trailing several yards of recording tape behind him. "Got it!" he cried triumphantly. "Look!" He spread the tapes out over the nearest table, collecting some dirty looks from a party of bridge players who were heading toward it.

"This is the magnetic record. I've reduced the sensitivity of one of the recorders until it no longer shoots off the paper. You can see exactly what's happening now. At these points the field starts to rise rapidly to over a thousand times its normal value. It stays that way for a couple of minutes and then drops back to normal—so."

With his finger Jones traced the rise and fall of the magnetic field. "There are two things to note. The rise isn't instantaneous but takes just over a second in each case. It seems to be exponential. That's just what happens, of course, when you switch on the current in an electromagnet. And the fall is just the same while the plateau in between is perfectly flat. The whole thing is obviously artificial."

"That's exactly what I said in the first place! But there's no such magnet on the Observatory!"

"Wait a minute—I haven't finished yet. You'll see that the field jumps up at fairly regular intervals and I've carefully noted the times at which it's come on. I've had the whole staff going through the tapes of every automatic recorder in the place to see if anything else has happened at the same instants."

"Quite a lot has—nearly all the records show some fluctuations. The cosmic ray intensity, for instance, falls off when the field goes on. I suppose all the primaries are being swept into it so that we don't receive them. But the oddest of all is the seismograph tape."

"*Seismograph!* Who ever heard of a magnetic moonquake?"

"That's what I thought at first, but here it is. Now if you look carefully you can see that each of the little moonquakes arrives just about a minute and a half after the jolt in the magnetic field, which presumably travels at the velocity of light. We know how fast waves travel through the lunar rock—it's about a mile a second."

"So we are forced to the conclusion that about a hundred miles away someone is switching on the most colossal

magnetic field that's ever been made. It's so huge it wrecks our instruments, which means that it must run into millions of gauss.

"The earthquake—sorry, moonquake—must be a secondary effect. There's a lot of magnetic rock round here and I imagine it must get quite a shock when that field goes on. You probably wouldn't notice the quake even if you were where it started but our seismographs are so sensitive they'll spot meteors falling anywhere within twenty miles."

"That's about the best piece of high-speed research I've ever encountered."

"Thanks, but there's still more to come. Next I went up to Signals to find if they'd noticed anything. And were they in a rage! All communication has been wrecked by bursts of static at exactly the same instants as our magnetic barrages. What's more they'd taken bearings on the source—and with my ranges we have it pinpointed exactly. It's coming from somewhere in the Sea of Rains, about five miles south of Pico."

"Holy smoke!" said Wheeler. "We might have guessed!"

The two physicists pounced on him simultaneously. "Why did you say that?"

Remembering his promise Wheeler looked hesitantly at Jamieson, who came to the rescue. "We've just come back from Pico. There's a Government research project going on out there. Very hush-hush—you can't get near the place. It's a big dome out on the plain, at least twice the size of the Observatory. Must have a lot of stuff in it from what they say."

"So that's what those ships are doing out over the *Mare*. Did you have a chance to see anything?"

"Not a thing."

"Pity—we must take a trip across."

"I shouldn't if I were you. They were very polite to us—but next time I think it might be different. They told us they didn't want visitors."

"So you got into the place then?"

"Yes."

"What a waste. They *would* let in a couple of dumb astronomers who wouldn't know a dynamo from a transformer. Now we won't have a chance."

"Oh, I suppose you'll know all about it some day."

IV

IT WAS one of those remarks that was to come true sooner than anyone could have expected. For the rumors had been correct—the greatest of all uranium deposits had been discovered on the Moon. And the Federation knew it.

Looking back from our vantage point upon events now safely buried in history we can see the merits of both sides. The rulers of Earth honestly feared the Federation and its revolutionary ideals. The fear was not entirely rational—it was born of a deeper subconscious realization that Earth's pioneering days were done and that the future lay with those who were already at the frontiers of the Solar System, planning the first onslaught against the stars.

Earth was weary after her epic history and the effort she had put forth to conquer the nearer worlds—those worlds which had so inexplicably turned against her as long ago the American colonies had turned against their motherland. In both cases the causes were similar and in both the eventual outcomes equally advantageous to mankind.

Only for one thing would Earth still fight—for the preservation of a way of living which, although outmoded, was all she knew. Let us not therefore too harshly judge those leaders who, fearing the mounting strength of the Federation, attempted to deprive it of the metal which would have given it almost limitless power.

For its part the Federation had not been free from blame. Amongst the idealists and scientists, who had been

attracted by the promise of the outer worlds, were not a few men of more ruthless breed, men who had long known that a breach with Earth would one day be inevitable. It was these who had planned the research which culminated in the cruisers Acheron and Eridanus and later the superdreadnought Phlegethon.

Those ships were made possible by the invention of the Wilson or accelerationless drive. So universal is the Wilson drive today that it is difficult to realize it was being perfected in secret for ten years before the Solar System learned of its existence. Around that drive the Federation built its three warships and their armament.

Even today little has been revealed of the weapons with which the Battle of the Plain was fought. Atomic power and the tremendous development of electronic engineering during the twentieth century had made them possible. It was never intended that these fearful weapons be used—the mere revelation of their existence would, it was hoped, wring the necessary concessions from Earth.

It was a dangerous policy but one which might have worked had not Earth possessed a superb intelligence service. When at last the Federation put forth its strength, countermeasures had already been taken. In addition Earth had by supreme good fortune just discovered a branch of radiation physics which made possible a weapon of which its opponents knew nothing and against which they had no defense.

The Federation, expecting no opposition whatsoever, had made the age-old mistake of underestimating its opponent.

* * * * *

It was nightfall on the Observatory meridian. All the free members of the staff had gathered, as was the custom, around the observation windows to say farewell to the Sun they would not see

again for fourteen days. Only the highest mountain peaks were still catching the last slanting light. Long since the valleys had been engulfed in darkness. The Sun's disc was already invisible. As the minutes crawled by the splendor died slowly on the blazing mountain spires as though reluctant to leave them.

And now only a blazing peak could still be seen, far out over the hidden ramparts of the Alps. The Sea of Rains had been in darkness for many hours but Pico's inaccessible crown had not yet sunk into the cone of night sweeping round the Moon. A lonely beacon, it still defied the gathering dusk.

In silence the little group of men and women watched the darkness flooding up the great mountain's slopes. Their remoteness from Earth and the rest of the human race made more poignant the sense of sadness that is the heritage of Man whenever he watches the setting of the Sun.

The light ebbed and died on the distant peak—the long lunar night had begun. When in fourteen days the Sun rose again it would look down upon a vastly different Sea of Rains. The astronomers had paid their last respects to the proud mountain that seemed the very symbol of eternity. When the dawn came it would have vanished forever.

DURING the next two weeks, there was little relaxation for anyone at the Observatory. Wheeler and Jamieson, who were studying the light curves of variable stars in the Andromeda nebula, had been allotted the use of the thousand-inch telescope for one hour in every thirty. Nearly a score of other research programs had to be dovetailed according to an elaborate timetable—and woe betide anyone who tried to exceed his allowance!

The dome of the Observatory was now open to the stars and the astronomers were wearing light space-suits which scarcely restricted their move-

ments. Wheeler was taking a series of photometer readings which his colleague was recording when their suit radios began to hum with life. A general announcement was coming through. These were very common and the two men took no notice until they realized that it was directed at them.

"Will Dr. Jamieson please report to the Director at once? Dr. Jamieson to report to the Director at once, please."

Wheeler looked at his companion in surprise. "Hello, what have *you* been up to? Bad language again on the station frequency?"

This was the commonest crime in the Observatory. When one was wearing a space-suit it was often difficult to remember that the person being addressed was not necessarily the only listener. The possible indiscretions were legion and most of them had been committed at one time or another.

"No, *my* conscience at any rate is clear. You'll have to get someone else to finish this job. See you later."

In spite of his confidence Jamieson was relieved to find the Director in a friendly though worried mood. He was not alone. Sitting in his office was a middle-aged man nursing a briefcase and wearing clothes that indicated he had only just arrived. The Director wasted no time in formalities.

"Jamieson, you're the best tractor driver we have. I gather that you have been to the new establishment out in the *Mare Imbrium*. How long would it take you to get there?"

"What—now?—at night?"

"Yes."

Jamieson stood speechless for a moment, completely taken aback by the proposal. He had never driven at night. Only once had he been out as late as a day before sunset and that was bad enough. The inky shadows had lain everywhere, indistinguishable from crevasses. It needed a violent effort of will to drive into them—and even worse the real crevasses were indistinguishable from shadows.

The Director, seeing his hesitation, spoke again. "It won't be as bad as you think. The Earth's nearly full and there'll be plenty of light. There's no real danger if you're careful—but Dr. Fletcher wants to get to Pico in three hours. Can you do it?"

Jamieson was silent for a moment. Then he said, "I'm not sure but I'll try. Is it permissible to ask what this is all about?"

The Director glanced at the man with the briefcase. "Well, Doctor?"

The other shook his head and answered in a quiet and unusually well-modulated voice, "Sorry—I can only tell you that I've got to reach the installation as soon as humanly possible. I was on my way by rocket when the underjets started to cut and we had to come down at Aristillus.

"It will take twenty-four hours to fix the ship, so I decided to go on by tractor. It's only taken me three hours to get here but they told me I'd need an Observatory driver for the next lap. In fact, they mentioned you."

Jamieson was somewhat amused by the mixture of encouragement and flat-tery. "The road to Aristillus happens to be the only decent highway on the Moon," he said. "I've done a hundred on it before now. You'll find things very different out on the *Mare*—even in daylight, thirty's a good average. I'm perfectly willing to have a shot at it but you won't enjoy the ride."

"I'll take that risk—and thanks for helping."

Jamieson turned to the Director. "How about getting back, Sir?"

"I leave that entirely to you, Jamieson. If you think best stay there until morning. Otherwise come back as soon as you've had a rest. Whom do you want as a second driver?"

IT WAS a stringent rule that no one could leave the Observatory without a companion. Apart from the danger of physical accident the psychological effect of the lunar silences upon an iso-

lated man was sometimes enough to unbalance the sanest minds.

"I'll take Wheeler, sir."

"Can he drive?"

"Yes, I taught him myself."

"Good. Well, the best of luck—and don't come back until dawn unless you feel perfectly safe."

Wheeler was already waiting at the tractor when Jamieson and the stranger arrived. The Director must have called him and given him full instructions, for he carried a couple of suitcases with his own and Jamieson's personal belongings. They hoped it would not be necessary to spend the seven days until dawn at the radio station but it was best to be prepared.

The great outer doors of the "Stable," as the tractor garage was called, slid smoothly open and the artificial light flooded out onto the roadway. There was a faint scurry of dust as the air rushed out of the lock. Then the tractor moved slowly forward through the open doors.

The roadway down the mountain looked very different now. A fortnight earlier, it had been a blinding ribbon of concrete, baking in the glare of the noonday Sun. Now it seemed almost self-luminous under the blue-green light of the gibbous Earth, which dominated a sky so full of stars that the familiar constellations were almost lost. The coastline of western Europe was clearly visible but the Mediterranean area was blotted out by dazzling clouds, too bright to look upon.

Jamieson wasted no time in sightseeing. He knew the road perfectly and the light was superb—safer than daylight because less overpowering. Out in the treacherous shadows of the Sea it would be very different but here he could do eighty with ease.

It seemed to Wheeler that the ride down the mountain road was even more shattering than it had been during the day. The ghostly quality of the Earth-light made it difficult to judge distances but the landscape was sliding past at an

appalling speed.

He glanced at the mysterious passenger, who seemed to be taking the ride very calmly. It was time to strike up an acquaintance—besides, he was anxious to discover what the whole business was about. Perhaps a calculated indiscretion might produce useful results.

"It's rather lucky we've been this way before," began Wheeler. "We visited the new radio station only a fortnight ago."

"Radio station?" said the passenger, his surprisingly level voice betraying just a trace of perplexity.

Wheeler was taken aback. "Yes, the place we're going to."

The other looked puzzled. Then he asked in a quiet voice, "Who told you what it was?"

Wheeler decided to be a little more discreet. "Oh, we managed to see a bit of the place while we were over there. I took a course in elementary electronics at Astrotech and recognized some of the gear."

For some reason the other appeared highly amused. He was about to reply when suddenly the tractor gave a jolt which roughly shot them both into the air.

"Better hang on to your seats now," called Jamieson over his shoulder. "This is where we leave the road. I think the suspension can take it—thank goodness I've just had it checked."

For the next few miles Wheeler was too breathless to do any further talking but he had time to think over his passenger's surprising reactions. Certain doubts began to form in his mind. Who, for example, had ever heard of a radio station generating colossal magnetic fields?

Wheeler looked at his passenger again, wishing he could read minds. He wondered what was in that tightly held briefcase with the triple locks. There were initials on it—he could just see them—J.A.F. They conveyed nothing to him.

DOCTOR James Alan Fletcher, Ph.D., was not at all happy. He had never been in a tractor before and sincerely hoped he never would be again. Up to the present his stomach had behaved itself but a few more jolts like the last would be too much for it. He was glad to see that the machine's thoughtful designers had foreseen such accidents and made certain provisions for them. That at least was reassuring.

Jamieson was sitting intently at the controls and had not spoken again since leaving the road. The ground over which the tractor was now traveling seemed bumpy but safe and the machine was averaging about fifty miles an hour. Presently it would enter a range of low hills a few miles ahead and its speed would be considerably reduced. So far, however, Jamieson had managed to avoid the shadows which the Earthlight was casting from every rise in the ground.

Fletcher decided to ignore the landscape outside. It was too lonely and overpowering. The brilliant light of the mother world—fifty times as bright as the full Moon on Earth—enhanced rather than diminished the impression of frightful cold. Those whitely gleaming rocks, Fletcher knew, were colder than liquid air. This was no place for man.

By comparison the tractor's interior was warm and homey. There were touches that brought earth very close. Who, Fletcher wondered, had been responsible for the photograph of a certain famous television star which was pinned against one wall? Wheeler caught his enquiring gaze and with a grin jerked his thumb towards the intent curve of Jamieson's back.

Suddenly darkness fell with an abruptness that was shocking. Simultaneously Jamieson brought the tractor almost to a halt. The twin beams of the machine's dirigible searchlights began to roam over the ground ahead and Fletcher realized that they had entered the shadow of a small hill. For the first

time he understood what the lunar night really meant.

Slowly the machine edged forward at five or ten miles an hour, the searchlights anxiously exploring every foot of the ground ahead. For twenty minutes the agonizingly slow progress continued. Then the tractor surmounted a rise and Fletcher was forced to shield his eyes from the glare of Earthlight on the rocks ahead. The shadow fell away as the machine picked up speed again and the welcome disc of the Earth appeared in the sky.

Fletcher looked at his watch and was surprised to see that they had been on their way less than fifty minutes. It was two minutes to the hour and automatically his eyes went to the radio. "Mind if I switch on the news?"

"Go right ahead—it's tuned to Manilius I, but you can get Earth direct if you want to."

The great lunar relay station came in crystal clear with no trace of fading. During the hours of darkness the Moon's feeble ionosphere had been completely dispersed and there were no reflected signals to interfere with the ground ray.

Fletcher was surprised to see that the tractor chronometer was over a second fast. Then he realized that it was set to lunar time, that the signal he was listening to had just bridged the quarter million miles gulf from Earth. It was a chilling reminder of his remoteness from home.

Then there came a delay so long that Wheeler turned up the volume to check that the set was still operating. After a full minute the announcer spoke, his voice striving desperately to be as impersonal as ever. "This is Earth calling. The following statement has just been issued from Berne—

"The Federation of the Outer Planets has informed the Government of Earth that it intends to seize certain portions of the Moon and that any attempt to resist this action will be countered by force.

"This Government is taking all necessary steps to preserve the integrity of the Moon. A further announcement will be issued as soon as possible. In the meantime it is emphasized that there is no immediate danger as there are no hostile ships within twenty hours' flight of Earth.

"This is Earth. Stand by."

V

A SUDDEN silence fell. Only the hiss of the carrier and the faint crackle of infinitely distant static still issued from the speaker. Jamieson had brought the tractor to a halt and had turned around in his seat to face Fletcher.

"So this is why you are in such a hurry," he said quietly.

Fletcher nodded. Color was slowly draining back to his face. "We did not expect it so soon."

There was a pause during which Jamieson made no effort to restart the tractor. Only the nervous drumming of Fletcher's fingers on his briefcase betrayed his tension. Then Jamieson spoke again. "And will this journey of yours make any real difference?"

Fletcher looked at him for a long time before he answered. "I'll tell you when we get there," he said. "Now, for God's sake, start driving!"

There was a long silence. Then Jamieson turned back to the controls and restarted the engine. "You'll be there in ninety minutes," he said.

He did not speak again during the journey. Only Wheeler realized what it must have cost him to make his decision. That Jamieson's loyalties were divided he could understand, for there were few scientists who did not share many of the Federation's nobler ideals. He was glad that Jamieson had gone forward, yet if he had turned back he would have respected his motives none the less.

The radio was now pouring out a stream of unintelligible coded instruc-

tions. No further news had come through and Wheeler wondered just what steps were being taken to defend the Moon. There was nothing that could be done in a few hours though the final touches could be put to plans already prepared. He began to suspect the nature of Fletcher's mission.

The latter had now opened his briefcase. It was full of photostats of extremely complicated circuits which he made no attempt to conceal. A single glance showed Wheeler that any secrecy was unnecessary for the mass of symbols and wiring was completely meaningless to him. Fletcher was ticking off various amendments against a list of corrections, as if making some final check. Wheeler could not help thinking that he was probably doing it more to pass the time than anything else.

FLETCHER was not a brave man—seldom in his life had he known the need for so primitive a virtue as physical courage. He was rather surprised at his absence of fear, now that the crisis was almost upon him. Well before dawn, he knew, he would probably be dead.

The thought gave him more annoyance than fear. It meant that his paper on wave propagation, all his work on the new beam, would remain unfinished. And he would never be able to claim the massive traveling allowance he had been planning as compensation for this frightful ride across the Sea of Rains.

A long time later a cry from Wheeler broke into his reverie. "Here we are!"

The tractor had surmounted a rise in the ground. Still a good many miles ahead the great metal dome was glinting in the Earthlight. It seemed utterly deserted but within, Fletcher knew, it would be seething with furious activity.

A searchlight reached out and speared the tractor. Jamieson drove steadily forward. He knew it was only a symbol, that for many miles invisible radiations had been scrutinizing them intently. He flashed the identification

letters of the machine and raced forward over the nearly level ground.

The tractor came to a halt in the monstrous shadow of the dome. Men were awaiting them by the airlock. Fletcher was already wearing his space-suit and his hand was on the door almost before the tractor came to a stop. "Just wait here a minute," he said, "while I find what's happened."

He was through the lock before the others could say a word. They saw him give a few hasty instructions and then he disappeared into the dome.

He was gone for less than five minutes, though to the astronomers fretting in the tractor it seemed an age. Abruptly he was back, the outer door of the airlock slamming violently behind him. He was in far too much of a hurry to remove his helmet and his voice came muffled through the plastic sphere.

"I haven't time for explanation," he said, addressing Jamieson, "but I'll keep the promise I made you. This place"—he gestured towards the dome—"covers the uranium the Federation wants to get. It's well defended and that's going to give our greedy friends a bit of a shock. But it has offensive armament as well. I designed it, and I'm here to make the final adjustments before it can go into action. So that answers your question about the importance of this journey.

"The Earth may owe you a greater debt than it can ever pay. Don't interrupt—this is more important. The radio was wrong about the twenty hours of safety. Federal ships have been detected a day out—but they're coming in ten times as fast as anything that's ever gone into space before. We've not much more than an hour left before they get here.

"You could stay, but for your own safety I advise you to turn round and drive like hell back to the Observatory. If anything starts to happen while you're still out in the open get under cover as quickly as possible. Go down into a crevasse—anywhere you can find

shelter—and stay there until it's over. Now good-bye and good luck."

HE WAS gone again before either of the two men could speak. The outer door slammed once more and the *Airlock Clear* indicator flashed on. They saw the dome entrance snap open and close behind him. Then the tractor was alone in the building's enormous shadow.

Nowhere else was there any sign of life but suddenly the framework of the machine began to vibrate at a steadily rising frequency. The meters on the control panel wavered madly, the lights dimmed and then it was all over.

Everything was normal again but some tremendous field of force had swept out from the dome and was even now expanding into space. It left the two men with an overpowering impression of energies awaiting the signal for their release. They began to understand the urgency of Fletcher's warning. The whole deserted landscape seemed tense with expectation.

Swiftly the caterpillar backed away from the dome and spun around on its tracks. Its twin searchlights threw their pools of light across the undulating plain. Then at full speed it tore away into the lunar night. Jamieson realised that the more miles he could put between himself and the mine the greater their chances of ever reaching the Observatory again.

* * * * *

Dr. Molton was passing through the gallery of the thousand-inch dome when the first announcement electrified the Observatory. Through all the speakers and over the radio of every space-suit in the station the Director's voice came roaring.

"Attention everybody! The Federation is about to attack the Moon. All members of the staff, with the exception of the telescope crew, are to go to the vaults immediately. I repeat, im-

mediately. The telescope crew will remove the mirror at once and will take it to the resurfacing room. That is all. Move!"

For a dozen heartbeats the life of the Observatory came to a standstill. Then with a slow majestic motion the thousand-ton shutters of the dome closed like folding petals. Air began to pour into the building from hundreds of vents as the telescope swung around to the vertical and the work of removing the mirror from its cell began.

When he started to run, Dr. Molton found that his legs seemed to have turned to water. His hands were trembling as he opened the nearest emergency locker and chose a space-suit that approximately fitted him. Though he was not one of the telescope crew he had work to do in the dome now that the emergency had arrived. There were the precious auxiliary instruments to be dismantled and removed to safety and that job alone would take hours.

As he began his work with the rest of the team, Molton's jangling nerves slowly returned to normal. Perhaps, after all, nothing serious would happen. Twenty years ago it had been a false alarm. Surely the Federation would not be so foolish—he checked his thoughts with a wry grimace. It was just such wishful thinking on Wheeler's part that had opened their discussion a fortnight ago. How he wished that Wheeler had been right!

Swiftly the minutes fled by as one by one the priceless instruments went down into the vaults. The great mirror was now free in its cell and the hoists had been attached to the supporting framework. No one had noticed the passage of time.

Glancing up at the clock Molton was amazed to see that nearly two hours had passed since the first radio warning. He wondered when there would be any further news. The whole thing still seemed a fantastic dream. The thought of danger was inconceivable in this re-

mote and peaceful spot.

The mirror-truck moved soundlessly up the ramp into its position beneath the telescope. Inch by inch the immense disc was lowered until the hoists could be removed. The whole operation had taken two hours and fifteen minutes—a record which was never likely to be surpassed.

The truck was now halfway down the ramp. Molton breathed a sigh of relief—his work also was nearly finished. Only the spectroscope had to be moved and—*What was that?*

The whole building suddenly trembled violently. A shudder ran through the mighty framework of the telescope. For a moment the space-suited figures swarming round its base stood motionless. Then there was a concerted rush to the observation windows.

It was impossible to look through them. Far out above the Sea of Rains something was blazing with a brilliance beyond all imagination. The Sun itself by comparison would have been scarcely visible.

Again the building trembled and a deep organ note ran through the mighty girders of the telescope. The mirror truck was now safely away, descending deep into the caverns far down in the solid rock. No conceivable danger could harm it there.

And now the hammer-blows were coming thick and fast with scarcely a pause between them. The rectangles of intolerable light cast by the observation windows on the floor and walls of the dome were shifting hither and thither as if their sources were moving swiftly round the sky.

Molton ran to get some sun filters so that he could look out into the glare without wrecking his eyes. But he was not allowed to do so. Once again the Director's voice came roaring from the speakers. *"Down into the vaults at once! Everybody!"*

As he left the dome Molton risked one backward glance over his shoulder. It seemed as if the great telescope were

already on fire, so brilliant was the light flowing through the windows from the inferno outside.

Strangely enough Molton's last thought as he went down to the vaults was not for his own safety nor that of the priceless telescope. He had suddenly remembered that Wheeler and Jamieson were somewhere in the Sea of Rains. He wondered if they would escape whatever hell was brewing out there on the barren plain.

Quite unaccountably he recalled Wheeler's ready smile, the fact that he had never been long absent even during those frequent periods when he was officially in disgrace. And Jamieson too, though quieter and more reserved, had been an intelligent and friendly colleague. The Observatory would miss them badly if they never returned.

THE storm broke when Jamieson had driven scarcely a dozen miles from the dome, for the speed of the oncoming ships had been grossly underestimated. Earth's far-flung detector screens had been designed to give warning of meteors only and these machines were infinitely faster than any meteor that had ever entered the Solar System.

The instruments had flickered once and then the ships were through. They had not even started to check their speed until they were a thousand miles from the surface of the Moon. In the last few miles of their trajectory the accelerationless drive had brought them to rest at nearly half a million gravities.

There was no warning of any kind. Suddenly the grey rocks of the Sea of Rains were lit with a brilliance they had never before known in all their history. Paralyzed by the glare Jamieson brought the tractor to a grinding halt until his eyes had readjusted themselves.

His first impression was that someone had turned a searchlight upon the machine. Then he realized that the source of the light was many miles overhead. High against the stars,

which it had dimmed almost to extinction, an enormous rocket flare was guttering and dying. As he watched, it slowly faded and for a little while the stars returned to their own.

"Well," said Wheeler in an awed voice, "I guess this is it."

Hanging motionless against the Milky Way were the three greatest ships that the two astronomers, or indeed most men, had ever seen. It was not possible to judge their distance—one could not tell whether they were ten or twenty miles overhead. They were so huge that the sense of perspective seemed somehow to have failed.

For several minutes the great ships made no attempt to move. Once again, though this time with even more reason, Jamieson felt the sense of brooding expectancy he had known in the shadow of the dome. Then another flare erupted amongst the stars and the world outside the tractor was overwhelmed with light. But as yet the ships had made no hostile move.

The commander of the Phlegethon was still in communication with Earth though he realized now that there was no hope of avoiding conflict. He was bitterly disappointed—he was also more than a little puzzled by the tone of quiet confidence with which Earth had rejected his ultimatum. He still did not know that the building below him was anything other than a mine. A mine it certainly was but it had kept its other secrets well.

The time limit expired—Earth had refused even to reply to the last appeal. The two watchers below knew only that one of the great ships had suddenly spun on its axis so that its prow pointed towards the Moon. Then, soundlessly, four arrows of fire split the darkness and plunged toward the plain.

"Rocket torpedoes!" gasped Wheeler. "Time we started to move!"

"Yes—into your space-suit! I'll drive Ferd between those rocks but we'll have to leave him there. We passed a crack just now that will protect us from

anything except a direct hit. I made a note of it at the time but didn't think we'd have to use it so quickly."

The rock-borne concussion reached them as they were struggling with the fittings of their space-suits. The tractor was jerked off the ground and slammed back with a jar that almost knocked them off their feet.

"If that scored a hit the mine's done for!" exclaimed Wheeler. "How can they fight back anyway? I'm sure they've got no guns there."

"We certainly wouldn't have seen them if they had," grunted Jamieson as he adjusted his helmet. He finished his remarks over the suit radio. "Ready now? Okay—out we go!"

Wheeler felt very reluctant to leave the warmth and security of the tractor. Jamieson had left it in the shelter of a group of boulders which would protect it from almost all directions. Only something dropping from above could do it any damage.

Wheeler was suddenly struck by an alarming thought. "If Ferdinand gets hit," he said, "that's the end of us anyway. So why bother to leave?"

"There's air in these suits for two days," answered Jamieson as he closed the door of the lock behind him. "We can walk back if we have to. Eighty miles sounds like a lot but it isn't so much on the Moon."

WHEELER said no more as they hurried to their shelter. An eighty-mile walk over the Sea of Rains was a sombre thought.

"This would have made a fine fox-hole in the last war," he said as he settled himself down among the debris of lava and pulverized rock at the bottom of the little ravine. "But I want to see what's going on over by the mine."

"So do I," said Jamieson, "but I also want to live to a ripe old age."

"I'll risk it," exclaimed Wheeler impetuously. "Everything seems quiet now anyway. I think those torpedoes must have finished the job." He jumped to-

ward the rim of the cleft and hauled himself out.

"What can you see?" asked Jamieson. His voice reached Wheeler easily though the suit's low-powered radio was heavily shielded by the solid rock.

"Wait a minute—I'm climbing up on this boulder to get a better view."

There was a short pause. Then Wheeler spoke again with a note of surprise in his voice. "The dome doesn't seem to be touched. Everything's just the same."

He was not to know that the first warning shots had landed many miles away from the mine. The second salvo of rockets was launched soon after he had reached his vantage point. This time they were intended to hit. Wheeler saw the long sheafs of flame driving steady and true towards their target. In a moment, he thought, that great dome would collapse like a broken toy.

The rockets never reached the surface of the Moon. They were still many miles up when, simultaneously, they exploded. Four enormous spheres of light blossomed amongst the stars and vanished. Automatically Wheeler braced himself for the concussion that could never come in the vacuum around him.

Something strange had happened to the dome. At first Wheeler thought that it had grown in size. Then he realized that the dome itself had gone and in its place was a wavering hemisphere of light, scarcely visible to the eye. It was like nothing he had ever seen before.

It was equally unfamiliar to the Federation ships. In a matter of seconds they had dwindled into space, shrinking under the drive of an inconceivable acceleration. They were taking no chances while they went into conference and hastily checked the armament they had never imagined they would have to use. Rather late in the day they understood the reason for Earth's quiet confidence.

They were gone only a brief while. Although they had disappeared together they returned from entirely different directions as if to confuse the

defenses of the mine. The two cruisers came down at steep angles from opposite corners of the sky and the battleship swept up over the horizon behind the screen of Pico, where it remained for the earlier part of the conflict.

Suddenly the cruisers vanished, as the dome had vanished, behind wavering spheres of light. But these spheres were already brilliant, shining with a strange orange glow. Wheeler realized that they must be radiation screens of some kind and as he looked again towards the mine he knew that the onslaught had begun.

The hemisphere on the plain was blazing with all the colors of the rainbow and its brilliance was increasing second by second. Power was being poured into it from outside, power that was being converted into the harmless rays of the visible spectrum. That at least was clear to Wheeler—he wondered how many millions of horsepower were flowing invisibly through the space between the cruisers and the mine. It was already far brighter than day.

Slowly understanding came to him. The rays which the twentieth century had imagined but never known were a myth no longer. Not like the space-ship, gradually and over many years, had they come upon the world. In secrecy, during the seventy years of peace, they had been conceived and brought to perfection.

The dome on the plain was a fortress, such a one as no earlier man had ever dreamed of before. Its defenses must have gone into action immediately the first beams of the enemy reacted upon them but for many minutes it made no attempt at retaliation. Nor yet was it in any position to do so, for under the blazing shield that protected them Fletcher and his colleagues were fighting time as well as the Federation.

Then Wheeler noticed a faint brush discharge on either side of the dome—that was all. But the screens of the cruisers turned cherry-red, then blue-white, then a color he knew but had

never thought to see on any world—the violet-white of the giant suns. So breathtaking was the sight that he gave no second thought to his deadly peril. Only imminent personal danger could move him now—whatever the risk, he must see the battle to its end.

Jamieson's anxious voice startled him when it came again over the speaker. "Hello, Con! What's happening?"

"The fight's started—come up and see."

For a few seconds Jamieson struggled against his natural caution. Then he emerged from the cleft and side by side the two men watched the greatest of all battles rising to its climax.

VI

MILLIONS of years ago the molten rock had frozen to form the Sea of Rains and now the weapons of the ships were turning it once more to lava. Out by the fortress clouds of incandescent vapor were being blasted into the sky as the beams of the attackers spent their fury against the unprotected rocks.

Ever and again a salvo of rocket torpedoes would lance toward the Moon and a mountain would rise slowly from the plain and settle back in fragments. None of the material projectiles ever reached their target, for the fields of the fortress deflected them in great spirals that sent many hurtling back into space.

Not a few were caught in the beams of the defenders and detonated many miles above the ground. The utter silence of their explosions was unnerving. Wheeler found himself continually preparing for the concussion that could never come—not on the atmosphereless Moon.

It was impossible to tell which side was inflicting more damage. Now and again a screen would flare up as a flicker of heat passed over white-hot steel. When that happened to one of the

cruisers it would move with an acceleration that could not be followed by the eye and it would be several seconds before the focusing devices of the fort could find it again.

The fort itself had to take all the punishment the ships could give it. After the battle had been on for a very few minutes it was impossible to look toward the south because of the glare. Ever and again the clouds of rock vapor would go sailing up into the sky, falling back to the ground like luminous steam. And all the while a circle of lava was creeping out from the base of the fortress, melting down the hills like lumps of wax.

During the whole of the engagement the two men spoke scarcely a dozen words. This was no time for talk—they knew that they were witnessing a battle of which all the ages to come would speak with awe. Even if they were killed by the stray energies reflected from the screens of the fortress it would have been worth it to have seen so much.

They were watching the cruisers, for it was possible now and then to look at them without being blinded, when suddenly they realized that the glare to the south had doubled its intensity. The battleship, which until now had taken no part in the action, had risen above Pico and was blasting at the fortress with all the weapons she possessed.

From where he was standing Wheeler could see the throats of her bow projectors—little pits of flame that looked as if they had been carved from the Sun. The summit of the mountain had been caught in those beams. It did not have time to melt—the peak vanished and only a ragged smoking plateau was left.

Wheeler was going to risk no further damage to his eyes, which were already paining him. With a word of explanation to Jamieson he raced back to the tractor and returned a few minutes later with a set of heavy-duty filters.

The relief was immense. No longer were the screens of the cruisers like

artificial suns and they could look once more in the direction of the fortress. Though he could see only the ray-shields against which the beams of the battleships were still splashing in vain it seemed to Wheeler that the hemisphere had lost its original symmetry during the battle.

At first he thought one of the generators might have failed. Then he saw that the lake of lava was at least a mile across and he knew that the whole fort had floated off its foundations. Probably the defenders were scarcely aware of the fact. Their insulation was taking care of solar heat and would hardly notice molten rock.

And now a strange thing was beginning to happen. The rays with which the battle was being fought were no longer quite invisible, for the fortress was no longer in a vacuum. Around it the boiling rock was releasing enormous volumes of gas through which the paths of the rays were as clearly visible as searchlights on Earth on a misty night.

At the same time Wheeler began to notice a continual hail of tiny particles around him. For a moment he was puzzled. Then he realized that the rock vapor was condensing after it had been blasted up into the sky. It seemed too light to be dangerous and he did not mention it to Jamieson.

As long as it was not too heavy the insulation of the space-suits could deal with it.

Accustomed though they were to the eternal silences of the Moon both men felt a sense of unreality at the sight of those tremendous weapons blasting overhead without a whisper of sound. Now and then there would be a hammerblow underfoot as a torpedo crashed, deflected by the fields of the fort. But most of the time there was absolute silence, even when there were half a dozen rockets detonating in the sky at once. It was like watching a television program when the sound had failed.

THEY never knew why the fortress waited so long before it used its main weapon. Possibly Fletcher could not get it into action earlier or perhaps he was waiting for the attack to slacken so that some energy could be diverted from the screens. For it was during a lull in the engagement that the polaron beam operated for the first time in history.

The two watchers saw it strike upward like an inverted lightning flash. It was clearly visible along its whole length, not merely in patches where it passed through dust and gas. Even in that brief instant of time Wheeler noticed this staggering violation of the laws of optics and wondered at its implications. Not until many years later did he learn how a polaron beam radiates some of its energy at right angles to its direction of propagation so that it can be seen even in a vacuum.

The beam went through the *Phlegethon* as if she did not exist. The most terrible thing Wheeler ever saw in his life was the way the screens of that great ship suddenly vanished as her generators died, leaving her helpless and unprotected in the sky. The secondary weapons of the fortress were at her instantly, tearing out great gashes of metal and boiling away her armor layer by layer.

Then, quite slowly, she began to settle towards the Moon, still on an even keel. No one will ever know what stopped her—probably some short-circuit in her controls since none of her crew could have been left alive. For suddenly she went off to the west in a long flat trajectory.

By that time most of her hull had been boiled away and the steel skeleton of her framework was almost completely exposed. The crash came minutes later as she plunged into the mountains beyond Plato.

When Wheeler looked again for the cruisers they were so far away that their screens had shrunk to little balls of fire against the stars. At first he

thought they were retreating—then abruptly the screens began to expand as they came down in an attack under terrific vertical acceleration. Around the fortress the lava was throwing itself madly into the sky as the beams tore into it.

The cruisers came out of their dives about a mile above the fort. For an instant they were motionless—then they went back into the sky together. But the *Eridanus* had been mortally wounded though the two watchers knew only that one of the screens was shrinking much more slowly than the other.

With a feeling of helpless fascination they watched the stricken cruiser fall back toward the Moon. About twenty miles up her screens seemed to explode and she hung unprotected, a sleek torpedo of black metal, visible only as a shadow against the stardust of the Milky Way.

Almost instantly her light-absorbing paint and the armor beneath were torn off by the beams of the fortress. The great ship turned cherry-red, then white. She swung over so that her prow pointed toward the Moon and began her last dive.

Wheeler felt his friend's grip upon his arm and Jamieson's voice rang through the speakers. "Back to the cleft for God's sake!"

He never knew how they reached the cleft in time and had no recollection of entering it. The last thing Wheeler saw was the remaining cruiser dwindling into space and the *Eridanus* coming down at him like an onrushing meteor. Then he was lying flat on his face among the rocks, expecting every moment to be his last.

She landed nearly five miles away. The impact threw Wheeler a yard off the ground and set the boulders dancing in the cleft. The whole surface of the plain quivered for seconds before the rocks settled back to rest.

Wheeler turned over on to his back, breathless, and looked up at the gibbous Earth that was just visible from his

position. He wondered what Earth had thought of the battle, which must have been clearly visible to the naked eye over the hemisphere facing the Moon. But his main feeling was relief at his escape. He did not know that the final paroxysm was yet to come.

Jamieson's voice brought him back to life. "You all right, Con?"

"Yes—I think so. That's two of them gone. By the way she was traveling I don't think number three will be coming back."

"Nor do I. Looks as if Earth's won the first round. Shall we go back to the tractor?"

"Just a minute—*what's the matter with those rocks up there?*"

Wheeler glanced towards the northern face of the cleft, which was several feet higher than the other. Over the exposed surfaces of the rock waves of light were passing in slow undulations.

Jamieson was the first to realize the cause. "It's the glare from that lava over by the fort. It will probably take a good while to cool off.

"It isn't cooling. Look—*it's getting brighter!*"

At first Wheeler had blamed his eyes but now there was no room for doubt. The rock was not merely reflecting light—it was turning cherry-red. Soon it was too bright to watch with the unprotected eye. With a feeling of sick helplessness he saw that everywhere the exposed rock surfaces were becoming incandescent.

Suddenly the appalling truth reached Wheeler's brain. The generators of the wrecked ship had not yet detonated and the energy which it would have poured out in hours of continuous fighting was leaking away at a rate rising swiftly toward catastrophe. And he realized that all the atomic explosions of the past would be as nothing against what might happen now.

Then the Moon awoke from its sleep. The plain seemed to tear itself asunder and he could almost hear a mighty wind of radiation sweeping overhead. This

was the last thing he knew before the quake reached him.

AGES later he was awakened by the glare of Earthlight in his eyes. For a long time he lay in a half dazed condition, knitting together the broken threads of memory. Then he recalled what had happened and began to look around for his friend.

It gave him a shock to discover that his torch was broken. There was no sign of Jamieson in the narrow portion of the cleft illuminated by the Earth and he could not explore the shadows without a light. As he lay there wondering what to do next, a strange sound began to intrude upon his consciousness. It was an unpleasant rasping noise that grew stronger minute by minute.

Not since his childhood, when night had once caught him in a strange wood far from home had Wheeler known such real terror as he felt now. This was the airless Moon—there could be no sound here! Then his fuddled wits cleared and he burst into peals of relieved and half hysterical laughter.

Somewhere in the darkness near him Jamieson, still unconscious, was breathing heavily into his microphone.

Wheeler's laughter must have aroused his friend, for suddenly he heard Jamieson calling unsteadily through the speaker. "Hello, Con—what the devil's the matter?"

Wheeler took a firm grip of himself. "It's okay, Sid—I'm just a bit giddy. Are you all right?"

"Yes—at least I think so. But my head's still ringing."

"So is mine. Do you think it's safe to climb out now?"

"I don't see what else can happen now but I guess we'll have to wait here for a while. Look at that rock."

The walls overhead had been partly sheared away by the blast and were still glowing dully. The rock was too hot to touch and it was many minutes before the two men could crawl out of their refuge.

They were both prepared for a scene of devastation but the reality exceeded their wildest fears. Around them was a vision of the inferno. The whole landscape, from horizon to horizon, had altered beyond recognition. To the east the beautiful mountain that had been Pico was gone.

In its place was a sheared and blistered stump, only a fraction of its former height. It must have caught the full blast of that mammoth explosion. In all the plain, as far as the eye could see, there was no other outstanding projection. Of the fortress not a trace was left. Everything had been leveled by that final incredible blast of radiation.

That was Wheeler's first impression. Then he realized that it was not completely correct. About five miles away to the west was another pool of lava, a mile or two across, and in its center was a roughly hemispherical bulge. As he watched, it settled down into the molten rock until there was nothing left.

Then there came a faint trembling underfoot, and a curious disturbance at the center of the lake. Like some evil thing emerging from the sea a great column of lava slowly climbed towards the stars, tottered and slowly fell. So sluggish was its motion that it never reached the ground but froze even as it fell to form a crooked finger jutting out of the plain. And that was the end of the *Eridanus*.

Jamieson broke the long silence at last. "Ready to start walking?" he said.

TEN million miles away, the mortally wounded *Acheron* was limping back to Mars, bearing the shattered hopes of the Federation. On the second moon of Jupiter, white-faced men were sitting in conference and the destinies of the outer planets were passing from the hands of those who had planned the raid against the Moon.

Down on Earth the statesmen of the mother world faced reality at last. They had seen the Wilson drive in action and knew that the day of the rocket was

gone. They also realized that although they had—at tremendous cost—won the first round the greater science of the Federation must prevail in the end. Peace and the Wilson drive were worth all the uranium in the universe. A message was already on its way to Mars with the news that Earth was willing to reopen negotiations.

It was well for humanity that the battle ended as it had. The *Acheron* would never fight again and no one could tell that any building made by man had ever stood in the Sea of Rains. Both sides had exhausted themselves.

Had Jamieson refused to continue his journey to the fortress complete victory might have gone to the Federation. Flushed with success, it might have been tempted to further adventures and the Treaty of Phoebus would never have been signed. Upon such small decisions may world destinies depend.

* * * * *

For hours, it seemed to Wheeler, they had been trudging across this seared and shattered plain, the brilliant Earthlight casting their shadows ahead of them. They spoke seldom, wishing to conserve the batteries of their suit radios. The curvature of the Moon made it impossible to signal the Observatory and there were still fifty miles to go.

It was not a pleasant prospect, for they had been able to salvage nothing from the tractor—it was now a pile of fused metal. But at least they could not lose their way with the Earth hanging fixed in the sky to guide them. They had only to keep walking into their shadows and in due course the Alps would come up over the horizon.

Wheeler was plodding along behind his friend, lost in his own thoughts, when Jamieson suddenly changed his direction of march. Slightly to the left a low ridge had appeared. When they reached it they found themselves climbing a hill not more than fifty feet high.

They looked eagerly to the north, but there was still no sign of the Alps. Jamieson switched on his radio.

"They can't be far below the horizon," he said. "I'm going to risk it."

"Risk what?"

"Emergency transmission. You can key these sets for two minutes at fifty times normal power. Here goes."

Very carefully, he broke the seal on the little control board inside the suit, and sent out the three dots, three dashes and three dots which were all that was left of the old Morse code.

Then they waited, staring toward the featureless skyline of the north. Below its edge, beyond sight and perhaps beyond signaling, lay safety. But the Observatory gave no sign.

Five minutes later Jamieson signaled again. This time he did not wait. "Come on," he said. "We'd better start walking again." Wheeler followed glumly.

They were halfway down the slope when a golden flare climbed into the northern sky and erupted slowly against the stars. The sense of relief was so great that Wheeler was left weak.

He sat down clumsily on the nearest boulder and stared at that beautiful, heart-warming symbol hanging in the sky. Even now, he knew, the rescue tractors would be racing down the slope of the mountains.

He turned to his friend. "Well, Sid, that's that, thank God."

For a moment Jamieson did not reply. He too was staring up toward the stars—but along the path the retreating warship had followed hours before. "I wish I could be sure," he murmured half to himself, "that I did the right thing. They might have won . . ."

Then he turned toward the blinding disc of Earth, breathtakingly lovely beneath its belts of clouds. The future might belong to the Federation but almost all that it possessed it had inherited from the mother world. How could one choose between the two?

He shrugged his shoulders—there was nothing he could do about it now. Resolutely he turned toward the north and walked forward to receive the fame from which he would never escape.



THE DOME

*Kyle Braden believed himself a wise man
when he was actually a foolish ostrich!*

KYLE BRADEN sat in his comfortable armchair and stared at the switch in the opposite wall, wondering for the millionth—or was it the billionth?—time whether he was ready to take the risk of pulling it. The millionth or the billionth time in—it would be thirty years today, this afternoon.

It meant probable death and in just what form he didn't know. Not atomic

death certainly—all the bombs would have been used up many many years ago. They'd have lasted long enough to destroy the fabric of civilization, yes. There were more than enough bombs for that. And his careful calculations, thirty years ago, had proven that it would be almost a century before man got really started on a new civilization—what was left of him.

But what went on now, *out there*, out-

by Fredric Brown

side the domelike force field that still shielded him from horror? Men as beasts? Or had mankind gone down completely and left the field to the other and less vicious brutes? No, mankind would have survived somewhere; he'd make his way back eventually. And possibly the record of what he had done to himself would remain, at least as legend, to deter him from doing it a second time. Or would it deter him even if full records remained to him?

Thirty years, Braden thought. He sighed at the weary length of them. Yet he'd had and still had everything he really needed and lonesomeness is better than sudden death. Life alone is better than no life at all—with death in some horrible form.

So he had thought thirty years ago, when he had been thirty-seven years old. So he still thought now at sixty-seven. He didn't regret what he had done, not at all. But he was tired. He wondered, for the millionth—or the billionth?—time whether he wasn't ready to pull that lever.

Just maybe, out there, they'd have struggled back to some reasonable, if agrarian, form of living. And he could help them, could give them things and knowledge they'd need. He could savor, before he was *really* old, their gratitude and the good feeling of helping them.

THEN too he didn't want to die alone. He'd lived alone and it had been tolerable most of the time—but dying alone was something else. Somehow dying alone here would be worse than being killed by the neo-barbarians he expected to find out there. The agrarians were really too much to hope for after only thirty years.

And today would be a good day for it. Exactly thirty years, if his chronometers were still accurate, and they wouldn't be far wrong even in that length of time. A few more hours to make it the same time of day, thirty years to the minute. Yes, irrevocable as it was, he'd do it then. Until now the

irrevocability of pulling that switch had stopped him every time he'd considered it.

If only the dome of force could be turned off and then on again the decision would have been easy and he'd have tried it long ago. Perhaps after ten years or fifteen. But it took tremendous power to create the field if very little power to maintain it. There'd still been outside power available when he'd first flashed it on.

Of course the field itself had broken the connection—had broken *all* connection—once he'd flashed it into being, but the power sources within the building had been enough to supply his own needs and the negligible power required to maintain the field.

Yes, he decided suddenly and definitely, he'd pull that switch today as soon as the few hours were up that would make the time exactly thirty years. Thirty years was long enough to be alone.

He hadn't wanted to be alone. If only Myra, his secretary, hadn't walked out on him when . . . It was too late to think of that—but he thought of it as he had a billion times before. Why had she been so ridiculous about wanting to share the fate of the rest of humanity, to try to help those who were beyond help? And she'd loved him. Aside from that quixotic idea she'd have married him. He'd been too abrupt in explaining the truth—he'd shocked her. But how wonderful it would have been had she stayed with him.

Partly the fault was that the news had come sooner than he'd anticipated. When he'd turned the radio off that morning he'd known there were only hours left. He'd pressed the button that summoned Myra and she'd come in, beautiful, cool, unruffled. You'd think she never listened to the newscasts or read the papers, that she didn't know what was happening.

"Sit down, my dear," he'd told her. Her eyes had widened a bit at the unexpected form of address but she'd grace-

fully seated herself in the chair in which she always sat to take dictation. She poised her pencil.

"No, Myra," he said. "This is personal—very personal. I want to ask you to marry me."

Her eyes really widened. "Dr. Braden, are you—joking?"

"No. Very definitely not. I know I'm a bit older than you but not too much so, I hope. I'm thirty-seven although I may seem a bit older right now as a result of the way I've been working. You're—is it twenty-seven?"

"Twenty-eight last week. But I wasn't thinking of age. It's just—well, 'This is so sudden,' sounds like I'm joking, but it *is*. You've never even"—she grinned impishly—"you've never even made a pass at me. And you're about the first man I've ever worked for who hasn't."

Braden smiled at her. "I'm sorry. I didn't know it was expected. But, Myra, I'm serious. *Will you marry me?*"

She looked at him thoughtfully. "I—don't know. The strange thing is that—I guess I am in love with you a little. I don't know why I should be. You've been so impersonal and businesslike, so tied up in your work. You've never even tried to kiss me, never even paid me a compliment.

"But—well; I don't like this sudden and—unsentimental—a proposal. Why not ask me again sometime soon. And in the meantime—well, you might even tell me that you love me. It might help."

"I do, Myra. Please forgive me. But at least—you're not definitely against marrying me? You're not turning me down?"

She shook her head slowly. Her eyes, staring at him, were very beautiful.

"Then, Myra, let me explain why I am so late and so sudden in asking you. First I have been working desperately and against time. Do you know what I've been working on?"

"Something to do with defense, I know. Some—device. And, unless I'm wrong you've been doing it on your own without the government backing you."

"That's right," Braden said. "The high brass wouldn't believe my theories—and most other physicists disagreed with me too. But fortunately I have—did have—private wealth from certain patents I took out a few years ago in electronics. What I've been working on has been a defense against the A-bomb and the H-bomb—and anything else short of turning Earth into a small sun. A globular force field through which nothing—nothing whatever—can penetrate."

"And you . . ."

"Yes, I have it. It is ready to flash into existence now around this building and to remain operative as long as I wish it to. *Nothing* can get through it though I maintain it for as many years as I wish. Furthermore this building is now stocked with a tremendous quantity of supplies—of all kinds. Even chemicals and seeds for hydroponic gardens. There is enough of everything here to supply two people for—for their lifetimes."

"But—you're turning this over to the government, aren't you? If it's a defense against the H-bomb . . ."

BRADEN frowned. "It is, but unfortunately it turns out to have negligible, if any, military value. The high brass was right on that. You see, Myra, the power required to create such a force field varies with the cube of its size. The one about this building will be eighty feet in diameter—and when I turn it on the power drain will probably burn out the lighting system of Cleveland.

"To throw such a dome over—well, even over a tiny village or over a single military camp would take more electric power than is consumed by the whole country in weeks. And once turned off to let anything or anybody in or out it would require the same impracticable amount of power to recreate the field.

"The only conceivable use the government could make of it would be such use as I intend to make myself. To preserve

the lives of one or two, at most a few individuals—to let them live through the holocaust and the savagery to come. And, except here, it's too late even for that."

"Too late—why?"

"There won't be time for them to construct the equipment. My dear, the war is on."

Her face grew white as she stared at him.

He said, "On the radio, a few minutes ago. Boston has been destroyed by an atomic bomb. War has been declared." He spoke faster. "And you know all that means and will lead to. I'm closing the switch that will put on the field and I'm keeping it on until it's safe to open it again." He didn't shock her further by saying that he didn't think it would be completely safe within their lifetimes. "We can't help anyone else now—it's too late. But we can save ourselves."

He sighed. "I'm sorry I had to be so abrupt about this. But now you understand why. In fact, I don't ask you to marry me right away, if you have any doubt at all. Just stay here until you're ready. Let me say the things, do the things, I should have said and done."

"Until now"—he smiled at her—"until now I've been working so hard, so many hours a day, that I haven't had time to make love to you. But now there'll be time, lots of time—and I do love you, Myra."

She stood up suddenly. Unseeingly, almost blindly, she started for the doorway.

"Myra!" he called. He started around the desk after her. She turned at the door and held him back. Her face and her voice were quite calm.

"I've got to go, Doctor. I've had a little nurse's training. I'm going to be needed."

"But, Myra, think what's going to happen out there! They're going to turn into animals. They're going to die horribly. Listen, I love you too much to let you face that. Stay, please!"

Amazingly she had smiled at him. "Good-bye, Dr. Braden. I'm afraid that I'm going to have to die with the rest of the animals. I guess I'm crazy that way."

And the door had closed behind her. From the window he had watched her go down the steps and start running as soon as she had reached the sidewalk.

There'd been the roar of jets overhead. Probably, he thought, this soon, they were ours. But they could be the enemy—over the pole and across Canada, so high that they'd escaped detection, swooping low as they crossed Erie. With Cleveland as one of their objectives. Maybe somehow they'd even know of him and his work and had made Cleveland a prime objective. He had run to the switch and thrown it.

Outside the window, twenty feet from it, a gray nothingness had sprung into being. All sound from outside had ceased. He had gone out of the house and looked at it—the visible half of it a gray hemisphere, forty feet high and eighty feet broad, just big enough to clear the two-story almost cubical building that was his home and his laboratory both. And he knew that it extended forty feet into the earth to complete a perfect sphere. No ravaging force could enter it from above, no earthworm crawl through it from below.

None had for thirty years.

Well, it hadn't been too bad a thirty years, he thought. He'd had his books—and he'd read his favorite ones so often that he knew them almost by heart. He'd kept on experimenting and—although, the last seven years, since he'd passed sixty, he'd gradually lost interest and creativeness—he'd accomplished a few little things.

Nothing comparable to the field itself or even his inventions before that—but there hadn't been the incentive. Too slight a probability that anything he developed would ever be of use to himself or to anybody else. What good is a refinement in electronics to a savage who doesn't know how to tune a simple

radio set, let alone build one.

Well, there'd been enough to keep him sane if not happy.

HE WENT to the window and stared through it at the gray impalpability twenty feet away. If only he could lower it and then, when he saw what he knew he would see, restore it quickly. But once down it was down for good.

He walked to the switch and stood staring at it. Suddenly he reached up and pulled it. He turned slowly to the window and then walked, almost ran, to it. The gray wall was gone—what lay beyond it was sheerly incredible.

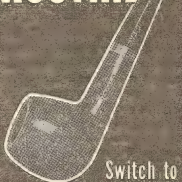
Not the Cleveland he'd known but a beautiful city, a new city. What had been a narrow street was a wide boulevard. The houses, the buildings, were clean and beautiful, the style of architecture strange to him. Grass, trees, everything well kept. What had happened—how could it be? After atomic war mankind couldn't possibly have come back this far, this quickly. Else all of sociology was wrong and ridiculous.

And where were the people? As if in answer a car went by. A car? It looked like no car he'd ever seen before. Much faster, much sleeker, much more maneuverable—it barely seemed to touch the street, as though anti-gravity took away its weight while gyroscopes gave it stability. A man and woman rode in it, the man driving. He was young and handsome, the woman young and beautiful.

They turned and looked his way and suddenly the man stopped the vehicle—stopped it in an incredibly short distance for the speed at which they'd been traveling. Of course, Braden thought—they've driven past here before and the gray dome was here and now it's gone. The car started up again. Braden thought, they've gone to tell someone.

He went to the door and outside, out onto the lovely boulevard. Out in the open he realized why there were so few people, so little traffic. His chronometers had gone wrong. Over thirty years they

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were off by hours at least. It was early morning—from the position of the Sun between six and seven o'clock.

He started walking. If he stayed there, in the house that had been thirty years under the dome, someone would come as soon as the young couple who had seen had reported. And yes, whoever came would explain what had happened but he wanted to figure it out for himself, to realize it more gradually than that.

He walked. He met no one. This was

a fine residential part of town now and it was very early. He saw a few people at a distance. Their dress was different from his but not enough so as to make him an object of immediate curiosity. He saw more of the incredible vehicles but none of their occupants chanced to notice him. They traveled incredibly fast.

At last he came to a store that was open. He walked in, too consumed by excited curiosity by now to wait any longer. A young man with curly hair was arranging things behind the counter. He looked at Braden almost incredulously, then asked politely, "What can I do for you, sir?"

"Please don't think I'm crazy. I'll explain later. Just answer this. What happened thirty years ago? Wasn't there atomic war?"

The young man's eyes lighted. "Why, you must be the man who's been under the dome, sir. That explains why you..." He stopped as though embarrassed.

"Yes," Braden said. "I've been under the dome. But *what happened?* After Boston was destroyed what happened?"

"Space-ships, sir. The destruction of Boston was accidental. A fleet of ships came from Aldebaran. A race far more advanced than we and benevolent. They came to welcome us into the Union and to help us. Unfortunately one crashed—into Boston—and the atomics that powered it exploded, and a million were killed. But other ships landed everywhere within hours and explained and apologized and war was averted—very narrowly. United States air fleets were already en route, but they managed to call them back."

Braden said hoarsely, "Then there was no war?"

"Of course not. War is something

back in the dark ages now, thanks to the Galactic Union. We haven't even national governments now to declare a war. There *can't* be war. And our progress, with the help of the Union, has been—well, tremendous. We've colonized Mars and Venus—they weren't inhabited and the Union assigned them to us so we could expand. But Mars and Venus are just suburbs. We travel to the stars. We've even..." He paused.

Braden held tightly to the edge of the counter. He'd missed it all. He'd been thirty years alone and now he was an old man. He asked, "You've even—what?" Something inside him told him what was coming and he could hardly hear his own voice.

"Well, we're not immortal but we're closer to it than we were. We live for centuries. I wasn't much younger than you were thirty years ago. But—I'm afraid you missed out on it, sir. The processes the Union gave us work only on humans up to middle age—fifty at the very most. And you're—"

"Sixty-seven," Braden said stiffly. "Thank you."

Yes, he'd missed everything. The stars—he'd have given almost anything to go there but he didn't want to now. And Myra.

He could have had her and they'd both still be young.

He walked out of the store and turned his footsteps toward the building that had been under the dome. By now they'd be waiting for him there. And maybe they'd give him the only thing he'd ask of them—power to restore the force field so he could finish what was left of his life there under the dome. Yes, the only thing he wanted now was what he'd thought he wanted least—to die, as he had lived, alone.

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THE MERAKIAN MIRACLE

'A Novelet by KENDELL FOSTER CROSSEN Next Issue!'

When Dorgan blew
his special blasts,
all girls became
ecdysiasts!



A girl started
to disrobe

by
**LARRY
CLINTON**

No DIPSYP For DIX

I'M Johnny Milton—manager of “Rusty” Mason’s orchestra. I started with Rusty five years ago when the band was nothing more than a third-rate ballroom outfit and worked with him until we built up the hottest dance-band attraction in America. Two weeks ago I would have given odds that

there was nothing in the entire band business that I hadn’t seen, heard or had happen to me. And then . . .

It was our last day in the Chicago theater. I was checking the stage before the house opened when “Dix” Dorgan called to me from the wings. He sounded excited.

"Hey, Johnny," he yelled. "Listen to this!"

I crossed the empty stage and found Dix waiting for me with an odd look in his eyes. He brought the trumpet up to his lips, took a deep breath and squeezed his face into a tortured expression. I waited, expecting to hear some new jazz riff he had dreamed up.

A vein stood out on his forehead, forming a purple Y like a neon sign. His eyes glazed and his neck turned red as it bulged out over his collar. There was air going into the horn all right—I could see the hot vapor of his breath spill out through the bell.

But I couldn't hear a note.

Just a light *hiss* of air like a leaky hotel radiator without much steam behind it. Dix held the horn up there for several seconds. When he finally dropped his arms there were deep white ridges on his lips. He opened his eyes wide and stared at me.

"Look, kid," I said sternly, "you shouldn't warm up by trying for high notes—especially on your first day back with the band."

"Whadd'ye mean, *trying*?" Dix insisted. "Didn't you *hear* it? Listen!"

He went through the same routine—the deep breath, the pucker, that same awful expression. This time his eyes bulged too. I listened intently, hearing only that faint steamy sound. Dix dropped the horn and leered at me.

"Man, that's the highest note ever played on a trumpet!"

"Sure, kid," I agreed, feeling a sharp pounding headache coming on. The theater curtain was closing and the house was about to open. I grabbed the excuse to get away.

"I've got to change the show routine, Dix. See you later."

The taxi crash that ruined Dix's two front teeth had happened five days before. It was a good thing we were in Chicago when it happened—we found a local man to fill in for Dix and it gave him enough time to get the teeth capped.

Rusty was unhappy, though—nobody could play a jazz lead like Dix. Funny, but it's always a real dippy character like that who is hard to replace. I was posting the new show routine on the switchboard when Rusty came in and looked over my shoulder.

"Same as opening day," I told him. "We start off with *Get Happy* and close with *Mason Drive*."

"It's nice to have old Dix back," Rusty grinned. "Where is he?"

"Out getting coffee," I lied. I wanted to say, "Look, if Dix tries to show you a high note—play along with him, will you? It will wear off."

I didn't say it naturally. One of my jobs as band manager is to keep Rusty from worrying, especially when we are on the road. We were on our way to the Coast to make a picture and settle down for a while in the Citrus Grove, Hollywood's latest play-spot for the movie crowd. Maybe then I could relax—but not now.

"First show at one-thirty," I told him. "I'll be up in the spotlight booth."

IT WAS a good, tightly paced show and the early audience loved it. When Rusty hit the big finale in *Mason Drive*—with the whole band standing up and blowing like crazy—the excited screams of the bobby-soxers below us rattled the walls of the booth. The spotlight man killed the amber flood as the curtains closed on the stage.

"Nice show," he admitted.

"Thanks, pal," I said. "Same routine for the rest of the day."

I climbed down the ladder to the balcony and found an enthusiastic mob milling around the head of the stairs. Rather than wait for the crowd to clear I took the long way around—through the boxes and across the stage to the street. I walked around the corner and came up to the theater marquee just as a police car pulled away from the curb. Nelson, the theater manager, was changing the admission signs on the box office. He looked upset.

"Have some trouble?" I asked.

"I'll say!" Nelson frowned. "Some gal started to disrobe during that last number!"

"What! In the theater?"

"Right in the balcony!" Nelson groaned. "I just hope it doesn't start a fad! You remember how dancing in the aisles got started back in nineteen thirty-eight."

stressing the possibilities if it should develop further. Marty was interested but cautious. "We'll have to get confirmation, Johnny. I'll have my local man check with the theater manager."

"Don't mention my name," I told him.

I hung up and started backstage, knowing that my bright idea would never get into print. Nelson would simply deny the whole thing. I wondered

Young Man With a Word

IT WAS way back in the early Jurassic era, we believe—about 1938—that a young jazzband sideman turned arranger decided to assemble a dance orchestra himself in order the better to plug the songs he was writing. And for the occasion he came up with a trick number on an old Dixieland lick that hit the country like the chestnut blight.

The young man in question bore the name of Larry Clinton and the number in question was entitled the DIPSY DOODLE. It was frankly derived from the sportswriters' term for Giant pitcher Carl Hubbell's screwball, then the most famous pitch in baseball—which they called his "dipsy-doo" in an effort to describe the ball's exasperating antics as it came up to the plate.

Millions of dance-addicts and tens of millions of radio listeners who didn't know a baseball from a curling stone went mildly insane to the contagious repetitions of the DIPSY DOODLE. There had been nothing like it since the MUSIC GOES ROUND AND AROUND madness of two years before. And Larry Clinton, his band and his vocalist, Bea Wain, seemed launched on an eminently lucrative career together.

It took Pearl Harbor to stop them. Clinton broke up the band to become an ATC pilot and when the war was over, so was the name-band era. Miss Wain had become a successful New York disc jockey. So the erstwhile leader went back to writing arrangements for song publishers and other orchestras.

But if the DIPSY DOODLE had failed to "get" our hero, as its lyric implied, the fiction writing bug had. He took Charley Strong's writing course in Manhasset, N. Y., his home town, and promptly began to sell stories all over the place. And NO DIPSY FOR DIX, one of his first sales, is probably the most authentic science fantasy with a jazzband background ever penned. It is an ingeniously wacky tale of a thoroughly wacky business.

—THE EDITOR.

He sounded very worried. I tried to soothe him. "I don't think this will catch on."

"I hope you're right," Nelson said. He looked at me sharply. "We're trying to hush this up. Don't talk about it to anybody, will you, Johnny?"

"Of course not," I assured him.

I didn't know the men in the local branches of the press wire services, so I called Marty Deblin at *Trans-World News* in New York. After all, publicity is an important part of my job.

"Marty," I enthused, "have I got a scoop for you!"

"Yes, Johnny," he said patiently. "Go ahead."

I told him of the stripping incident, enlarging upon it only slightly and

how deeply I would be in the Deblin dog-house when I opened the stage door and ran into Bill Merck. Bill plays lead trumpet on ballads and is a pretty solid Joe. He was looking for me.

"Can I see you for a minute, Johnny?"

"Sure, kid. How much do you want?"

Giving advances on salaries is part of my job too.

"It isn't that," he whispered. "It's about Dix."

I led him out on the stage where we could talk without interruption—when the amplifiers on the back of the movie screen weren't too loud. "What's the matter?" I asked.

"I dunno," Bill said. "It's kinda queer. When we started *Mason Drive* on the last show Dix asked me to play his part

—said he wanted to try something."

"Well?"

"We came to the last chorus—where we all stand up—and I couldn't hear him at all. I twisted around to look at him—and Johnny, I got scared! He was blowing like mad, with his face all screwed up—and *nothing was coming out of the horn!*"

Something big and dramatic was happening on the screen at that moment. The sound system roared with noisy fury. I waited for a lull in the sound track, trying to think of something to say.

"Look, Bill," I said finally, "Dix probably isn't over the effects of all that gas the dentist has been using on him. He just thinks he's being funny. We'll have to humor him for a while."

Bill nodded and went away, leaving me with a mind that was spinning around in circles. I'd heard of notes that were too high to be heard by the human ear—why, they even had a dog whistle on the market that was based on that principle. But out of a trumpet! A sudden wild idea came to my mind. I ran up the stairs and found Dix alone in the dressing room.

"Hey, Dix," I panted. "Do me a favor, will you? I'd like to hear that high note again."

His face lit up and he reached for the horn. "Sure," he grinned. I went over to the open window and looked down to the sidewalk below. I could hear Dix's deep breath and could imagine his contorted expression as the light hissing sound began. I kept my eyes on the street.

Two women were passing by on the sidewalk—they continued on their way without a pause. A stray dog, investigating the base of a light pole, began to yap like mad—but that could have been just a coincidence. Across the street a girl stepped into a waiting taxi. She didn't seem to be affected either. I sighed. It had been such a fabulous idea—but then, you always look for queer angles in this business. The

steamy hissing sound died away.

I was just turning away from the window when the commotion started. The taxi driver leaped out of his cab as if stung by a hornet and dashed toward the traffic cop at the corner. I couldn't see into the car but just before the crowd gathered I watched a pink silk undergarment come floating out of the rear window!

Entirely unaware of the excitement Dix called to me from across the room, "Ain't that a helluva note?"

"It sure is!" I agreed. That sharp pounding headache had come back again.

SOMEHOW I managed to talk Rusty out of using *Mason Drive* in the show, and gave Bill Merck strict orders not to take any more of Dix's parts. This thing had enormous possibilities and I didn't want anything to leak out until I was ready for it. As near as I could figure it the new dental work in Dix's mouth had given him a trick embouchure. That didn't worry me as long as Dix was happy—and I sensed a million dollars' worth of publicity if I could handle it properly. But, oh brother, it needed a lot of explaining.

I know nothing about the mechanics of sound—darn few people in the music business do. However, I had one friend who was a recognized expert in the field—Morton Grable, director of the Fidelity Recording Laboratories in New York. I put in a call for him and wound up talking to his secretary instead.

"Sorry," she said. "He went back on active duty with the Signal Corps last week."

"Active duty!" I gasped. "Don't tell me the old buzzard was in the reserves!"

"Colonel Grable," she said icily, "is now stationed in Washington. I can give you a telephone number there."

I didn't have much luck with the Pentagon number, either. A Major Campbell finally informed me that Mort was now on the West Coast.

"Where can I reach him there?" I asked. "We're leaving for Los Angeles

tonight. I could look him up."

"Sorry, Mr. Milton," the major said. "I can't give you that information."

"But this is important!" I argued. In desperation I exaggerated a little. "I'm not sure but I may have something of military value."

"Really?" he chuckled. "Suppose you tell me about it?"

"Well," I explained, "it's about sound that you can't hear. One of our men found a way to produce—"

"*Supersonics*?" the major cut in harshly. "Just a moment, Mr. Milton."

There was a series of clicks and I thought I could hear a whispered conversation at the other end of the line. When the major came back on there was a light bell-like sound in the background.

"This is being recorded," Major Campbell said sternly. "Go ahead. Give me all the details."

I didn't, naturally. After all, the major could have been a Dorsey or Kenton fan and I had no desire to see Dix wood right out of our band. I gave up just enough details to keep him interested, saying nothing about the startling results the high note produced.

"Very interesting!" he said when I'd finished. "Just what is your traveling schedule to the Coast, Mr. Milton?"

"We leave by bus after the last show tonight," I told him. "Tomorrow night we play State College in Kansas, then we catch the early morning train for Los Angeles."

"Where will you be staying there?"

"We'll be playing at the Citrus Grove," I said, "but I'll be stopping at the Hotel Alvinez."

"Hum-mm," the major mused. There was another whispered conversation. When he spoke again his voice was quite businesslike. "I think you can look forward to seeing Colonel Grable as soon as you get out there. Meanwhile, however, it may be necessary for us to take certain security measures."

"Don't worry about a thing," I assured him. "I won't talk to a soul until I see Mort Grable."

THE gymnasium at State College was festooned with miles of crepe paper. It was a pretty sight. The dance floor was crowded with crew-cut lads in dinner jackets and sweet young things in colorful evening gowns. I was on the balcony, watching Rusty charm them, when a dance committeeman told me I was wanted at the door. I went outside and found a slim, wiry man waiting for me on the steps.

"You want to see me?" I asked.

He looked at me sharply. "Your name Milton?"

I admitted it. He pulled a hand out of his pocket and shoved it toward me. I thought he wanted to shake hands—until I saw the little gold badge in his palm. "Name is Bullock," he said. "Should have been here earlier but my plane was late. Where is he?"

"Wait a minute!" I gasped. "What is this? Rusty doesn't owe any taxes or anything!"

"Look, Milton," he said dourly, "I'm not FBI—I'm Secret Service. Where is this Dorgan fella I have to look after?"

It suddenly hit me then—what the Pentagon major had meant by "security measures." I felt a little dazed as I led Bullock up to the balcony and pointed Dix out to him. He seemed disappointed.

"Doesn't look much like an inventor," he grunted.

I was trying to figure out what he meant by that remark when the dance number ended and Rusty turned around to talk to the band. They began pulling out music and Dix seemed to be arguing with Bill Merck. Bullock put a hand on my arm.

"By the way, Milton," he said, "we don't want a big fuss over this. Since I have to live with you boys until Colonel Grable takes over, maybe you'd better introduce me as an old friend."

"Hold it!" I said tersely. Rusty had turned back to the dance floor and was making an announcement over the microphone. . . . "a special request for one of our instrumental numbers. You may

find this a little fast for dancing but maybe you'd like to gather around for a few minutes while we give out with our recording arrangement of *Mason Drive*."

Wham! Rusty gave a downbeat, the brass ripped into the opening riff and I hit the stairs at the same time. I was too late. By the time I reached the dance floor there was a huge crowd around the stand. I wasted half a chorus trying to break through and almost got sluggish by a couple of large lads that resented my shoving.

In desperation, I ran across the dance floor and headed for the hall at the end of the room. Luckily I knew where the light switches were—we had checked them for the bandstand lights and the electric guitar before the dance. Now, if I could only reach that switch box before the end of the sax chorus—

I made it with seconds to spare. The brass section was just standing up when I pulled the main switch. The gym blacked out. The music stumbled to a stop. An excited squeal arose from the dance floor and died away as Rusty began to fake *Dancing in the Dark* on his trombone. The rhythm section joined in with a light, sensuous beat and you could hear the satisfied sighs of the boys and gals as they fell into each other's arms. It was wonderful showmanship on Rusty's part and I would have been a lot more appreciative if a powerful arm wasn't wrapped around my neck.

"What in hell are you trying to do, fella?" Bullock rasped.

I didn't tell Bullock what would have happened if I hadn't pulled that switch. That was my secret—and it was going to stay mine until I had a talk with Mort Grable. By now I was getting pretty good at making devious explanations.

The band accepted Bullock as an old friend of mine who was just coming along with us. Luckily I didn't have to let Rusty know anything about it—he was flying out to the Coast and had left

the dance a half hour early to catch his plane. Dix, however, was a problem. I introduced him to Bullock in the lounge of our Pullman car and told him of my telephone call to Washington.

"You see, Dix," I explained, "there is just a chance that your discovery may have a military value."

"My high note?" he said in an awed voice. "Man—ain't that somethin'! Wait'll I tell Bill Merck!"

"No!" Bullock said sharply. "Not a word! Not until I turn you over to Colonel Grable."

You could almost see the wheels of glory spinning in Dix's mind. He sat up stiffly and got a military edge to his voice.

"I hear you talkin'!" Dix said.

He got along wonderfully with Bullock—at breakfast, lunch and dinner. Between meals they played an endless game of gin rummy. By the morning of our second day on the train Bullock was wearing a haunted look.

We pulled into Los Angeles only a few hours before our opening at the Citrus Grove. I had to go directly to the nightclub to supervise the band set-up and suggested that Bullock go to the hotel with Dix. The Secret Service man groaned.

"When are you supposed to meet Colonel Grable?"

"You've got me," I said. "Maybe there'll be a message from him at the Grove."

BULLOCK pondered this for a moment. "I hope so," he sighed. "Let me know the minute you hear from him, will you? I'd like to deliver Dorgan and get out of here."

"What's the matter?" I asked. "Is old Dix getting in your hair?"

"Oh, he's a good kid, I guess. But *man!*"—Bullock's voice rose sharply—"I'm not sure the chief will dig me if I swallow this jive talk much longer."

There wasn't any message from Mort Grable. I was too busy to worry about it—the bandstand in the Citrus Grove

was ideal for a dozen musicians but we carried eighteen sidemen. I fought with the management to get a carpenter, then I fought with the carpenter to get what I wanted—and we finally got an extension completed a few minutes before the dinner crowd started filtering in.

It was a nice opening. All the music men and the local disc jockeys turned out to welcome Rusty, and Magnum Pictures supplied a garish floral greeting for the bandstand. Most of the movie crowd, I knew, would not be in until later. When the band went off for the hour intermission between dinner and supper sessions I decided to dash over to the hotel for a change of clothes. Bullock and Dix were standing on the sidewalk, looking for a cab.

"Any word?" Bullock asked.

"Not yet," I said. "Where are you heading?"

"Gonna dig a spade combo," Bullock groaned, "with a cat who blows a frantic piano. *Blows a piano!* Hurry up and save me, will you, pal?"

I grinned and walked down the street to the hotel. I was just getting my room key at the desk when a heavy hand fell on my shoulder. It was Mort Grable, resplendent and impressive in his military uniform.

"Johnny!" he said sternly. "What in hades have you been up to?"

"Mort!" I cried. "Am I glad to see you! Come on up while I change and I'll tell you all about it."

I gave him the whole story—Dix's new dental work, the high note, the disrobing episodes that always followed it. He listened with a disapproving frown. "Damned if I see any military value in it, Johnny."

"Well—" I said lamely, "I didn't know. Frankly I just wanted your advice. I didn't expect to start all this fuss."

Mort rubbed his chin thoughtfully. "It's not entirely your fault," he admitted. "You see, I'm in charge of a very hush-hush development in super-sonics. There was just a chance that you

had stumbled on something that would expose our work. But I'm sorry, Johnny—I can't buy that undressing routine."

"It happened!" I insisted. "Twice!"

"Knowing you," Mort said, "I suspect a publicity angle somewhere in this."

"My God!" I howled. "Do I have to undress half of America to prove it to you?"

"No," he grinned. "Just explain to me why only one person in that whole theater audience was affected."

"How should I know? That's *your* field. Maybe some people are more sensitive than others."

"Look, Johnny," Mort said patiently, "I'll admit we don't know too much about the effect of supersonic vibrations yet. We do know that certain frequencies will homogenize liquids, turn milk sour and cause other odd phenomena. As far as humans are concerned a combination of inaudible overtones may create a feeling of elation or depression—but the most violent effect should be nothing more than a headache."

"That's it!" I cried. "Every time Dix blows that note I get a violent headache!"

"In your business," Mort chuckled, "headaches are a normal occupational hazard. I'll make a scientific test though. Tomorrow morning we'll take your boy over to the lab and have him blow that note into a piezo-electric oscillograph. If he can really produce a supersonic vibration I'll tell you the exact frequency with all its overtones."

That was good enough for me. If Mort would supply me with proof that Dix was blowing a supersonic note I wouldn't worry about an explanation of the rest. Let the reporters tackle that—and you could lay odds they would all hear about it. The first thing I would do would be to have Rusty banned in Boston as a threat to public morals. We'd hit the front page of every newspaper with that. . . .

"Mort," I said, "you won't say anything to Dix about the disrobing stuff, will you? He doesn't know anything about it."

"I won't," Mort said idly. "Let's get over to the Citrus Grove. I imagine Bullock will want to see me."

"You don't know how right you are!" I told him.

WE WERE sitting at a table near the bandstand when the band started trickling back in. Bullock delivered Dix to his chair in the brass section and headed for us with a feverish expression. His voice was unusually high-pitched. "Man, am I glad to—"

He stopped abruptly and shuddered. With an obvious effort Bullock brought his voice back to a normal level. "Sorry," he groaned. "Lost my head, I guess. Glad to see you, Colonel."

They shook hands and the Secret Service man looked at his watch. Mort chuckled. "Anxious to get back? Don't worry—there's a Military Air Transport flight that leaves for Washington at one-thirty. We're holding a seat for you. Sit down and relax."

I had to make the rounds of the room to greet our old friends of the movie colony. It was quite a while before I could get back. The band had just finished a dance set and Dix was at the table, deep in conversation with Mort. Bullock looked bored.

"Man, I can hear it all right," Dix was arguing. "Hear it plain as a bell!"

"You probably feel it through bone conduction," Mort said. "What is the actual note?"

Dix's eyes clouded. "That's the weird part," he admitted. "Sometimes it sounds like a C, sometimes it sounds like an augmented fourth above. Does that sound screwy?"

"Harmonic overtones," Mort mused. "The oscillograph will show them."

"Is that like a record?" Dix asked. "Can you play it back?"

Mort shook his head. "No—the oscillograph gives us a visual analysis. If

that note is as high as you think it is there's no way of reproducing it on a record. Even vinylite won't reproduce much more than sixteen thousand cycles per second. Is *Mason Drive* the only number you can use it on?"

"Well," Dix explained, "I can't run up to it, see? I gotta set my chops for a high C, slide my tongue forward and squeeze like crazy. It takes a couple of bars to get set before I can pop it out. There aren't many arrangements I could fit it into—except maybe *Stardust*. I never tried that."

I leaned over the table and interrupted them. "Hey, did you see what Sally DeMar just brought in?"

They were just taking a ringside table—Sally with her bright red hair tumbling over her highly exposed shoulders, and a dark, swarthy character with a pointed black goatee. He made sure of getting attention by wearing a gray silk turban that towered over his petulant face. Sally looked positively entranced.

She was like that. With only an occasional appearance in pictures Sally remained in the public eye by collecting odd things—Russian wrestlers, nature boys and fake yogis. Dix snorted. "That cat's been listening to too much Bop!" he said.

Bullock groaned and looked at his watch again. I said, "Shh, Dix. Don't spoil Sally's act. I'm going over to meet him. I'll give you a full report later."

Sally was glad to see me—in an alcoholic sort of way. The Khedive, as the goateed guy called himself, managed to convey a total lack of interest in my company. He found a way to remove Sally from my tainted touch by taking her out on the crowded dance floor. The band was playing *Stardust*. I grinned and relaxed.

They were in the middle of the second chorus when it suddenly hit me—I remembered what Dix was saying when I interrupted. I scooted around the edge of the room just as Dix came down to the front of the bandstand for his

solo. Mort was watching him intently. I stopped and grabbed the table.

"Mort!" I yelled. "Dix isn't going to try it, is he?"

"Sit down," Mort said gently without looking at me. "Nothing is going to happen."

"Like heck!" I howled. "You two have it all cooked up! I've got to stop it!"

I tried to get away but Bullock had me firmly by the arm. "You heard the colonel," he growled. "Siddown!"

"Mort!" I wailed. He ignored me. I sagged into a chair and squeezed my temples, almost afraid to look up. If I'd only been able to convince Mort that it wasn't a publicity gag.

I knew where it would happen. At the end of Dix's chorus there is a four-bar interlude that builds up to a cut-off—leaving a nice open spot for Dix to hit the last note. Like a man who has to watch his own execution I stared up at him.

Dix had plenty of time to get set during the four-bar interlude. He winked at Mort, closed his eyes and forced his face into that horrible grimace. The band cut out and Rusty looked around in surprise as he waited for Dix to hit the last note.

I felt it all right—harsh and pounding in the back of my head. Mort had a puzzled frown on his face and his fingers drummed nervously on the table. Bullock wore a blank look. Then we heard the scream.

IT SEEMED to come from the middle of the dance floor, loud enough to be heard over the band as they hit the final chord. Dix, still blowing with his eyes closed, was oblivious to everything. I jumped to my feet and looked wildly around, trying to think of something to do as Sally DeMar broke through the crowd and dashed toward the bandstand. The Khedive was right behind her.

It was almost a shock to find that Sally was fully dressed—at least, as fully dressed as she was when she came in. With an amazing intensity of pur-

pose she eluded the goateed character's grasp and scrambled up on the bandstand. Dix opened his eyes and dropped his horn just as she threw her arms around his neck. The Khedive, still in pursuit, tripped and toppled toward them.

The next few seconds were rather hectic. Bullock got to the bandstand first—there was a wild flurry of arms and the gray silk turban flew out into space as the microphone crashed to the floor. By the time Mort and I broke in the Khedive was sitting on the floor with a hand over one eye. Bullock was holding Sally, who seemed quietly dazed, and Dix had a handkerchief up to his bruised lip. In ten seconds it was over. The Khedive and Sally hurriedly departed and we got Dix into the dressing room.

"What did that guy want to slug me for?" Dix demanded.

"He didn't mean to," I tried to explain. Mort cut me off.

"That's not important now!" he barked. He turned to Bullock. "Take Dix back to the hotel and get some ice for his lip."

"But—my plane!" Bullock groaned.

"Sorry!" Mort snapped. "You're staying over! Don't let Dix out of your sight. I want him safe and sound at the laboratory at nine o'clock tomorrow morning!"

"Nine o'clock?" Dix complained. "Man, that's practically the middle of the night!"

* * * * *

We were three unhappy people on the way to the lab the next morning. Dix was half asleep, Bullock was sullen and I had the damndest feeling of impending disaster. I was sorry I ever heard of the whole thing. I asked Dix about his lip. "The lip's okay," Dix said. "My teeth feel funny, though—like they were pressing together."

"That'll go away," I told him.

Mort met us at the door to the lab and took us up to a small recording studio with a large plate glass window.

We left Dix in the studio to warm up and went down the hall to the control room on the other side of the glass. Two engineers were sitting at the control panel, twisting dials and muttering to each other. We sat down and watched Dix unpack his horn in the other room.

"You won't be able to hear anything," Mort explained. "All we are after is a graph of the frequencies involved."

Dix was blowing away in the studio but the only effect in our room was on the dials before the two engineers. I kept my eyes on Dix. He seemed to be puzzled about something. Mort pressed a button that opened the intercom. "Ready?" he asked.

"I dunno," Dix muttered.

He took a deep breath and went into the contortion. Mort leaned intently over the two engineers and watched the dials. Dix dropped the horn and looked disgusted. Mort hit the intercom again.

"What's the matter?"

"I can't make it!" Dix wailed. "I don't even get a buzz!"

"Try it again," Mort demanded.

HE TRIED. We could see the purple Y on his forehead and the sweat pouring down his cheeks. But after each attempt Dix looked more and more defeated. Mort was tense. "What's wrong, Johnny?" he asked. "Is it too early in the morning for him?"

"No," I said slowly, "we've made records earlier than this. Could it possibly be his teeth?"

"Teeth?" Mort said sharply. "Has he complained about them?"

"He says they feel jammed together," I explained. "That accident last night must have jarred them out of line."

"That's it!" Mort sighed. "The passage of air was controlled by the exact position of those two front teeth. The slightest shift would destroy the effect!"

"You mean he can't—"

"It's gone," Mort said. "It was a freak—something that wouldn't happen again in a hundred years. By pure accident that Chicago dentist created an

odd resonance chamber. Now it's gone. Frankly I'm not sorry."

"What?"

"It was much too close to our experiments," Mort explained. "Of course we are working under rigid control with a definite purpose in mind. Dix's note was too erratic to be useful. It didn't mean anything, Johnny."

I groaned as my great publicity scheme collapsed. Mort looked at me with sympathy. "I hope Dix doesn't feel too bad about it," he said. "Believe me, though, it didn't mean a thing."

"Wait'll I try to tell Dix that," I frowned. "You know Dix."

I went down the hall and let myself into the studio. Dix was looking at his horn with thoughtful eyes. He hardly noticed me. "Look, kid," I said, "I've got bad news for you."

"Huh?" he grunted absently.

I told him what Mort had said. I couldn't explain the dental resonance-chamber idea too well but I did get over the point that he would no longer be able to blow the supersonic note.

"It's tough," I said, "but that's it. Of course we could go back to that dentist in Chicago—"

"Nah!" Dix said firmly. "You heard what the colonel said. We couldn't put it on a record anyway. What good is a dippy like that? Nowhere, man!"

I smiled sadly. "That's a good way to look at it, Dix."

"Sure," he said. "But you know what? When that screwball slugged me he did something to my embouchure."

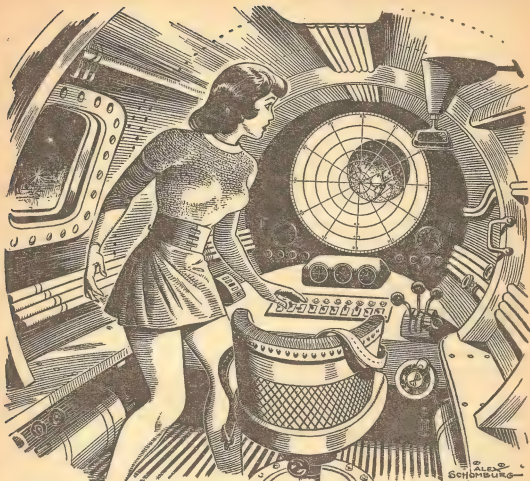
"What happened?"

"I dunno—but it's given me a whole new low register. Listen to this."

He picked up the horn and brought it to his lips, letting his face muscles sag. His lips seemed to spread out over the mouthpiece. The air in the room suddenly felt very stuffy, like it gets sometimes just before a thunderstorm. There was a sharp *click* and a diagonal crack appeared across the plate glass window. I felt a dull, throbbing headache in the back of my head.

"Oh, no, Dix!" I moaned.

Directly ahead, Marcia saw a planet on the screen



At Your Service

By CLEVE CARTMILL

Marcia knew she should get back to Earth and warn humanity of the perfection of the unknown planet—but there was always tomorrow!

PRESENTLY she found herself alone in limitless space and headed for death from starvation. The ship's boat had provisions for about three days, and the nearest star which might have planets was several light years away.

It had been a hard decision—to die quickly and alone or slowly and in the company of monsters. Yes, monsters, even if they were human. She could gorge herself on powdered fried chicken and concentrated vitamins for three days—and die.

The ship itself—*Arcturus IV*—was a remembered outline, far behind on her

port quarter. The mutineers, together with acquiescent passengers, were headed directly away from her, also toward some unknown destination.

She wished them luck. She examined the thought and reiterated it. She *did* wish them luck but she wanted no part of it.

She did not care to remember the captain's slashed throat and she did not wish to speculate on the kind of life the passengers would lead under the first mate, provided they found some place to lead a life.

That was why she had stolen the one-man life-boat and why she had taken off in the opposite direction—to nowhere.

She set the controls and went back to the tiny galley.

She picked a concentrate which recommended the addition of water. She added this and set it on the stove to boil. While she waited she reviewed her situation.

She had been Marcia Weller, Doctor Triumvirate of Psychometrics, en route to the sixth planet of Arcturus. She had been eagerly anticipating an interesting job, the cornerstone of a carefully planned career.

And now she was in Space with automatic machines guiding her to the ultimate nowhere.

She went into the boat's tiny bathroom. She looked at herself. Her dark image returned the look. Dark eyes, dark hair—verging on black—dark circles under the eyes. Those came from the last few sleepless days and nights and she presumed they would go away. Not that anybody would care.

But still she fixed her lips and covered the circles with powder and fluffed her hair with a comb. Might as well look her best, she thought—just in case. A bath, she thought, and clean underthings, a fresh make-up job—she suited action to the thought.

Reaction set in. She felt like a million. Hope raised its ever-new head. Could she get out of this? Could that planet, directly ahead . . . ?

DIRECTLY ahead—there *was* a planet on the screen. A planet where there should be nothing and lots of it. A planet with mountains and lakes and rivers and—and no vegetation.

No trees bowed over the rivers and streams. No snow capped the mountains. The planet was bare and dark but it was a landing place. She changed course. She would land on this desolate place. It was better than space.

But wait a minute, she thought. A planet with rivers and without vegetation? It didn't make sense. Still, that was what she had expected, a desert planet. This was made to specifications.

For Marcia had been thinking, she realized now, of a possible landing, bleak, deserted, but with plenty of water. You could survive longer without food than without water.

She pushed buttons, she covered glowing studs—and the ship obeyed as if she had it on a leash. It headed down, it plunged toward a river, it flattened out, it came to rest on a level spot, it sank to surface.

Marcia climbed out on the airless plain. Airless, she knew, because her analyzers had told her so. She retained her helmet and looked around.

Except for directly in front of her, where a river bubbled, there was nothing but bare rock. Nothing green waved anywhere, no birds sang. But the river rolled, the river bubbled and she knew she couldn't take off her helmet for a drink.

She wanted a drink. She could get one on the boat but she wanted one from the river. She wanted to lie down on her stomach and sink her face in the flowing wetness and . . .

* * * * *

She didn't know how much time had passed but she found herself flat and drinking from the stream—in the shade of hanging trees. And birds sang! And the air was sweet!

She got to her hands and knees and

swiveled her dark head, taking in the scenery, the greenery, where all had been bare and bleak before. This might be madness but surely madness had blurred edges, created as it was by a blurred mind. And there were no blurred edges anywhere.

This tree almost within reach was certainly not only a tree but a weeping willow tree. Its limbs drooped wistfully over the burbling water and a bird up among the small branches made answer.

She didn't need to see that plain gray bird, with its flat head and bright eyes, to know it for a mockingbird. But—a mockingbird here, just as at home . . .

And where was *here*? She had an odd thought—if she could go home, she'd be famous for discovering a new world with beautiful shade trees.

Shade trees—she examined the thought. She had seen this planet dark and bleak, without sunlight, without anything but water. But light from an unseen source now dappled the carpet of grass with moving shadows of the trees.

She wasn't ready yet to ask herself any basic questions. She wanted to look first. It occurred to her that she must resemble a curious dog, twisting her head from hands-and-knees position. She sprang lightly to her feet.

She touched the tree, just to make sure, then pinched herself to clinch the matter. The bark of the tree was solid and rough and the pinched spot on her shapely thigh turned red.

She walked out into the light and discovered that it came from a nearby star. There it was, blazing just like Sol, too bright for direct observation. She walked to the top of a grassy knoll and looked at the far mountains. They were stark and jagged no longer but softened and colored with trees and grass. The tallest wore a rakish tam of glistening white.

On all sides the fields rolled away, green and undulant, patched brightly here and there with red, blue and yellow flowers, clumped with stately oaks be-

hung with parasitic moss, just as at home.

The mockingbird continued to praise the beautiful day, the light breeze murmured endearments to the trees, the river frisked and yodeled past.

THE time has come, Marcia told herself firmly, to think. She turned and walked to her space-boat, and absently picked up her helmet en route. She wanted the familiar insides of the boat about her when she considered the situation rather than this strange and changing world.

She sat in the pilot's chair, strapped in, and took the ship aloft. She climbed to 10,000 feet and hovered there in brilliant sunlight, which poured in a golden flood on the lush rich land below.

She had failed to look at the star-ometer when she had landed on the bare rock and had no way of telling how much time had passed since then. She had a great deal of difficulty in persuading herself that she had seen the planet in bleak stone and darkness until she looked at the deactivated analyzers.

There was the record, each needle questing the presence of gas, beneficent or harmful, dead on zero. She pushed the analyzer handle and the dials came to life, recording oxygen, nitrogen, hydrogen, traces of argon, neon, helium and others, just as at home.

She backtracked along her trail of memory to the moment when she wished she could take off her helmet and drink from the stream. She remembered nothing between then and the time she was actually drinking the cool sweet water. Surely some time must have passed. A land cannot go through such a change in an instant. It would take years and years . . .

Years—hmm. She put the ship on automatic and went to the bathroom mirror. She frowned, then smiled at her image. Years hadn't gone by. If anything, she looked younger than when she had last examined herself.

How then had it happened—and when? Had this planet, deserted apparently except for herself, slipped into another variant of the time stream she had known? Had this deserted world evolved into . . .

Deserted? Strange, she thought, that she had seen no evidence anywhere of intelligent life. All that growth—and the birds—bespoke millennia. It seemed odd that the human race had not discovered it or that its own race had not evolved.

She went back to the pilot's chair and frowned at the screen. All that world, she thought in a sudden rush of loneliness, and nobody on it but her.

The frown gave way to popping eyes. Far off, almost on the horizon, a non-natural shape stood against its background in sharp symmetry. It looked like a tower.

Even as her thoughts formed she set the boat racing forward. The silhouette became a three-dimensional tower of lacy metal. At its widespread base nestled a house, an honest-to-gosh bungalow, complete with green trim.

She zoomed down to a manicured lawn and leaped out. She ran up the flagstone walk, flanked by low hedges, to the spotless porch and punched the pearly button. Chimes inside went up the scale in thirds and back again. The door opened graciously, almost with a bow, she thought with an inward giggle.

A deep voice like remembered cathedral music said, "Please to enter."

She stepped into a room of more generous proportions than the exterior of the cottage had indicated and saw that the sense of spaciousness came from bareness. Bare walls and bare floor. Not even light fixtures. How had the doorbell worked?

The rich and bell-like voice said, "This is your house," and she whirled toward its source.

This was a brown ovoid object that stood three feet tall in the kitchen doorway. At least she supposed it was the kitchen—she could see the end of a tile

sink over the Something's head. Well, not head exactly, as she knew heads—but the term would have to do.

"I am Voul," it said. "As you see I am a robot. I am completely at your service, now and always."

"Ulp!" Marcia said.

She stared at Voul for a few moments, wondering if it could move or if it were always going to be in the kitchen doorway to step over or around. It might be awkward when guests . . . *Guests!* She snorted to herself.

"Some house," she said involuntarily.

The organ tone murmured, "It displeases you?"

"Oh, no," Marcia said hastily. "Don't misunderstand me. I'm grateful, believe me, to whoever gave it—or told you to . . . Oh, I'm all mixed up! But there's no furniture! It's just a barn!"

Voul regarded her studiously for several minutes. Voul had nothing that could pass for eyes or a face either, for that matter, but it seemed to be studying her. Finally it moved with a rolling method of propulsion to a closed door in the wall opposite Marcia and opened it with what is best described as a tentacle.

"Please to look into your bedroom," Voul said in that voice of rich beauty.

MARCIA went hesitantly across the room, her steps echoing from the bare floor, and looked across Voul. She gasped with delight.

It was a dream room. A thick deep-green carpet lay from wall to wall, all four of which were a rich cream color. Bright curtains of green and yellow hung at the windows between dull maroon drapes.

The bed was so graceful and beautifully made that it looked as if it could sing you to sleep. The spread matched the yellow in the curtains, embroidered with tiny flying birds. Two chairs, one big and comfortable for reading, one to look pretty in a corner, were set at tasteful angles.

The mirror was a tinted floor-to-ceil-

ing panel that reflected without distortion. On each side of it were the halves of a dressing table that could be pushed together if desired.

"Why," Marcia said. "Why, it's beautiful! Utterly lovely! I don't care if there isn't anything in the rest of the house for the time being."

She fell silent, again feeling that she was being studied. The robot remained perfectly immobile but she had the almost undefinable impression that her mind was being inspected. The sensation was too fleeting to come into conscious focus for Voul spoke after a couple of seconds.

"You will see the remainder of your house?"

"My house?"

"Yours," Voul said and pointed behind her. "See."

Marcia turned and caught her breath, more because of the chuckling little blaze in the corner fireplace than at the completely furnished room, which now looked as comfortable as an old shoe and as neat and polished as a new one. It was perfect to the last detail but a touch too bright, she thought.

She stifled her exclamations of pleasure and regarded the room under a thoughtful frown. It was possible that the bedroom had been as it was now when she had entered the house. But not this room—she had seen *this* room. It had been bare when she came in. There had been no fireplace, much less a fire. There had been no furniture, no bouquets on tables, no tables.

She absently crossed to the control panel and set the polarizer between medium and low, darkening the room cozily. She set the fireplace control at ember level and went, still frowning, to the kitchen.

She would have liked to enter the kitchen in an *Exposition*, for it had everything for push-button cooking ever devised by the mind of man. The other three rooms were in the same class—bathroom, guest room and library. This was the home supreme.

She went back to the living room after her tour, automatically took a lighted cigarette from the mantel dispenser and stared at the rosy bed of coals.

The main thing, she thought, was not to lose her head. When every possibility was eliminated as false, what remained was true even if it were impossible. On the face of it, this situation was false. What, then, was true?

She went back to the mutiny and the death of the captain. She firmly believed that to be a matter of actual experience. Her memory recalled sense experiences of her flight from the mutineers and she believed these to be true. She had landed on this—this?—on a planet. She had wished for a drink of fresh running water.

Up to that point everything was solid. But from then on conditions did not conform to past or extensionalized experience. Something outside experience must have transpired then.

The interval between wishing for a drink and having it was a blank. That interval needed filling with remembered experience. Several possibilities occurred. Perhaps she had re-entered the life-boat and moved on till she found another planet—this one.

BUT that was impossible. She remembered gravity—her weight had seemed about as it was at home. The life-boat would not pull out of the atmosphere of such a planet. No, once exposed to the full gravitational pull of such a planet the life-boat was good only for near-surface travel and that for limited distances.

It remained then that she was still on the original planet.

A dream—a wish-fulfillment dream? She considered this as a possibility for some time, then discarded it. All the dreams she remembered were full of non-sequiturs, abrupt changes in scene and personnel and moved in a time stream that had little to do with waking reality.

But from the time she had realized

she was drinking under the willow tree until she entered this cottage events had followed in leisurely if illogical succession. Once she was inside nothing made sense even though she had a compelling feeling that all this was real, was happening.

And hadn't she felt the tree and pinched herself?

Dead then—or dying? She could not entertain this thought. It was a simply ridiculous premise.

She tried to think of some other explanation and found none. So far as she could tell what seemed to be true *was* true. She could see Voul, standing beside the bedroom door, motionless, featureless. She could feel warmth from the glowing source in the fireplace. A long ash dropped from her cigarette to the hearth. She smelled the flowers, tasted the final puff from her cigarette, heard the tiny thump of the butt as she dropped it into an extinguisher.

The questions now were why and how?

She half turned to face the bedroom door. "Voul."

"At your service," the brown ovoid replied.

"Where did you come from?"

The silence lasted until she was about to repeat the question sharply. Then Voul said, "Here."

"Here? Where is—no, never mind that yet. Who made you?"

"Made?" Voul repeated. "Nobody. I—exist."

"But you say you're a robot. That means some higher intelligence conceived you, created you."

"There is no higher intelligence," Voul said in his deep rich voice and a chill prickled Marcia's spine.

"How long have you been—here?" she persisted.

"Forever."

"I see." She marshalled the statements but could make no complete pattern. "Where is here?" she asked. "What planet is this?"

Again the silent study. "Earth," Voul

said unexpectedly.

"But it can't be," Marcia said.

Voul waved a tentacle. "See. Look outside. What else?"

Marcia had to admit this was true on the face of it. But so many questions remained unanswered. Perhaps she could get an inkling of the answers by regimented study, as she had been trained to do. Well, she would save that until after lunch.

Lunch, she thought. That raised a problem. She had a certain amount of food in the ship's boat but after it was gone, what then? The ground here was obviously rich and productive and she could live off the land if she had seed to plant.

She probably couldn't exist until any edible crop matured, anyway, she thought, and dismissed the matter. She was hungry now and supposed she would have to bring in the supplies from the boat and do the best she could.

But though she was hungry she had no appetite for the standard concentrates. She knew intellectually, of course, that they would supply all her bodily needs but the picture of a steak arose in her mind and would not be put aside.

A thick steak, one you could almost milk, flanked by small browned potatoes, smothered in butter-sautéed mushrooms, Romaine leaves drenched in a pungent garlic dressing—since she was alone here—followed by a slab of crunchy apple pie and heavy black coffee, lightly laced with brandy.

She sighed, her mouth awash in gastric juices. A muted noise from the kitchen made her aware that she had been staring into the fireplace in a welter of escoffier nostalgia. She turned away to see Voul entering the room laden with a steaming tray. She gave a soft cry of pleasure as she recognized his burden.

"Luncheon is served," Voul said.

And *how* it was served! It occurred to Marcia that a fortune could be made in the restaurant business if one had serv-

ants like Voul.

The meal was exactly what she wanted and she cleaned up every scrap. She felt like purring over her café royale. She'd get fat, she reflected, if she continued to eat like this. She must take a long walk after awhile and remove the slight bulge raised by this meal alone.

But she felt drowsy and decided to take a short nap, leaving the walking and the thinking until later.

She wasn't surprised to find the bed turned down, and silk pajamas of her favorite color laid out.

THE loneliness hit her two weeks later in the afternoon of the third dull gray day of rain. She tired of watching the rivulets wriggle down the pane and set the polarizer at maximum. She push-buttoned the walls to radiance and was inclosed in a small cozy private world.

Private, she thought, was no name for it. She wished passionately for company, for Voul was less than nothing as far as stimulating conversation was concerned.

Voul had one purpose, which was to serve. This, she admitted with boredom, it did perfectly.

The trouble was it left her with nothing to do. Nothing to do but eat, sleep and exercise. She had found a few books in the library but she had read the fiction before and the textbooks were oddly incomplete.

The textbooks she had studied before, including the sections which had interested her, were all there just as she remembered. But here and there were whole groups of pages completely bare or with part of a sentence or paragraph standing alone on an otherwise empty page. Not that she minded—these were parts of the books she had skimmed or skipped entirely. But it seemed curious.

She had spent the first few days of this new life in furious concentration, trying to make sense out of the situation. But Voul, her only possible source of information, remembered nothing be-

fore her advent here. She had gone walking in the vicinity, seeking some clue. She had explored miles in each direction in the ship's boat.

But there was only an endless and empty perfection aside from the towering lacy metal framework nearby and the cottage. Green fields splashed with flowers, birds, a few scattered cattle—which accounted for the steaks—an occasional rabbit, far-off mountains. That was all.

These trips, short and long, had offered some variety but even so she had become bored. And now, shut up for three days by rain . . .

Of course the land needed rain. She had thought this on her last walk, seeing yellow blades in the grass, flower petals curling along browning edges. Ordinarily she would have enjoyed the rain but cooped up for three days with nobody to talk to . . .

Her doorbell rang.

Even as she rose, fluffed her hair and wondered if her face was clean, Voul was at the door.

"Please to enter."

Marcia had difficulty in not gasping with joy and throwing herself in the arms of the man who entered. He was tall, broad-shouldered, lean-hipped, with a craggy face slightly off center. His eyes were a frosty blue and his smile a thing of beauty. His hair was crisp and blondish like ripe wheat. His gaily-colored garments accentuated his magnificent frame. In Marcia's enraptured eyes he could pass for a god.

"Why, he could be—" she thought and he finished the thought.

"I am Lars Jensen," he said. "How do you do?"

She didn't say, "Thank God, you've come," or, "I could have searched a thousand years and never found anybody like you," but her tone did when she said, "Do come in!"

She introduced herself, told Voul to bring refreshments, restrained herself from trying to carry him to a chair and tucked him in and excused herself for a

few moments. She went into the bedroom to make herself look as well as possible, wishing she had a hot job of a hostess gown like one she had longed for from afar once.

She raced through a bath and make-up job and went rather forlornly to the closet for fresh shorts and a clean blouse. And there was the hostess gown

She didn't even think twice about it but sheathed herself in it and thought, "That gorgeous hunk of man!" She realized she should feel some shame or guilt because of her thoughts but she did a little dance instead and exulted at her mirror image. When he saw her in this outfit, she thought, he'd *never* go away.

Her visitor leaped to his feet as she came through the bedroom door. She paused and he gave her the long breathless look she had always wished some man would give her.

"You were beautiful before," he said in a deep soft voice, "but now—" He made a helpless gesture that said she was beyond description or compare.

Marcia almost squealed with pleasure. But she gave him a nod of thanks and a little aloof smile and walked with slow dignity to a chair opposite his. A gentleman, too. He didn't rush over and grab her hand and he remained standing until she was seated.

SHE poured tea for herself, scotch and a little soda for him and smiled across the small table. Yes, just as she had thought, there were lines in his face, distinguishing lines. Though he was young you could see that he had lived. A captain, maybe, or a Space Patrol secret agent. There were far away spaces reflected in his frosty eyes. Oh, lucky, lucky, she thought, but . . .

"How did you get here?" she asked and waited for what she knew would be a thrilling tale.

He waved toward the rainy outdoors. "In the ship's boat," he said. "I was lucky. I escaped."

"Pirates?" she breathed.

"Pirates."

"Tell me, tell me!"

"Nothing much to tell," he said with becoming modesty. "We were captured, I managed to kill a few and took off. I found this place and"—he hesitated, his eyes softened and his voice was encyclopedic with meaning—"and you, Miss Weller."

"Under the circumstances," Marcia said gaily, "I think we can drop the formalities, Lars. You see," she went on with some difficulty, trying to maintain the exact, correct attitude, "we are the only living persons on this planet."

He gave her a long look that was carefully expressionless. "I see," he said non-committally and Marcia's heart churned all the more for it.

"Fortunately," she said, "I have a spare room. You will stay here, of course, until you can build you a place of your own. It has been—very lonely here," she finished in a small voice.

"I trust you will not have that complaint again," he said gallantly.

"I'm sure I won't. But you must be hungry. *Voul!*" she called.

Voul appeared, she gave orders and then devoted herself to her visitor. "Tell me all about yourself, Lars."

It developed that he had been born on Earth about the same time as she and, wonder of wonders, his experiences almost paralleled hers. They remembered the same things about the same places. Being a man he had been and seen certain places she had only wondered about but he was properly reticent about such experiences.

She passed the most delightful hour of her life before Voul announced the splendid dinner it had prepared. The meal was served perfectly, as usual, and Marcia soon wanted to be alone and hug herself and think about her wonderful visitor and herself and their future together.

She excused herself and Lars Jensen bade her a formal if meaningful good-night. Marcia luxuriated in bed, plan-

ning tomorrow and tomorrow, and tried to remember when the moon was full next.

She admitted to herself that she was dreadfully in love. Not that she would let him know it right away, of course. A decent interval must pass, even if there was no public to form an opinion. But she would contrive to let him know her regard—though if the expression in his eyes meant anything it would come as no surprise.

She found herself too keyed up to sleep. She turned this way and that, tried to relax. But it was no good. She decided to get a drink of cold water and smoke a cigaret.

She got into a dressing gown and slippers, wondered if Lars were still up, and went toward the kitchen. Apparently he had retired. The living room was empty.

As she walked into the kitchen her thoughts were in such a whirl that she really had nothing on her mind. She had no conscious desire, having decided on a drink and a smoke. Perhaps that was how and why she took Voul unaware for the first time.

As she entered the kitchen she glanced casually toward the door of the guest room. It was open. Voul was turning down the bed. Lars was standing in the corner . . . Lars was standing in the corner. Her mind said it over and over and her skin crawled.

Lars was standing in the corner as if some other hand had stood him there out of the way, as you might stand a broom or a mop.

He leaned stiffly at an angle, supported by the corner, and his face was empty. His eyes were blue but glassy, inanimate. The splendid mouth was neither slack nor tense, it was nothing. He wasn't a man at all. He wasn't alive

...
"Oh, no!" Marcia moaned.

Almost instantly the figure was animated. But there was no smile, no frost in the eyes, no gallantry. It was just an animated figure. Animated, not alive.

Marcia whirled and fled to her room.

MARCIA never again set eyes on the thing that had called itself Lars Jensen. Voul could give no explanation other than that it had been "provided" for her pleasure, that when it ceased to perform its function it had been "removed." Where it came from, who "provided" and "removed" it, remained unknown.

She went through several phases in the next few weeks. One was a kind of horror at her own conduct and thoughts concerning "Lars Jensen" when she had believed it to be a real man. She recovered from this with a few spiritual scars and tried to think objectively about the whole picture.

Wherever her thoughts led her they came back to one point—whatever she wished for she got. This had happened continually since taking her first drink from the boisterous river. Food, clothes, shelter—even that abortive attempt to provide companionship.

This indicated some power subject to her will but Marcia stubbornly refused to assign intelligence to this power. All her training and conditioning rebelled at belief in anything supernatural. She felt that a physical explanation of the observed phenomena was possible.

But as to how to get this explanation she admitted defeat. She was certain that the agency, whatever it was, operated through Voul, but that creature's answers were confusingly unhelpful.

"I have been here forever . . . I am here to serve you . . . There was no time before this . . . These things are provided in answer to your wish."

And so on. It was so easy to drift with the tide of service. If she wished for something it was "provided." She noted the peculiarities in these provisions for awhile but since she couldn't explain them she soon ignored them.

That matter of books, for example. Only the parts she had read were complete. She had also asked for the latest Earth magazines and they were repli-

cas of what the ship had carried. Some were merely covers with blank insides. Others had stories complete or nearly so. Authors' names were in some cases garbled or missing. But the parts that were complete were parts which had held her interest.

And "Lars Jensen." He hadn't been able to talk about anything she hadn't known by experience or by an extension of experience. He had treated her with the gallantry she had wished for. He had been simply her own opposite number.

There was nothing new then in life here under these conditions. She could live that life out, exquisitely served with anything she could remember, but could never have any new experience.

She loathed for a time this monotonous picture of the future but gradually fell into the routine of doing nothing save getting what she wanted. She began to regard herself as fortunate above all others, those poor grubs who sweated for their daily bread and shelter, who had no time for long hours of meditation on the past.

Her life, pleasant at all times, became luxurious. She acquired jewels, furs, exotic clothes. She dressed like a princess of old, she dawdled, she grew plump and comfortable. Her appetite, always good, she satisfied in ways that had been beyond her means at home.

One day she idly asked Voul a question. "Where do you get the power that operates you?"

"From the tower, of course," Voul replied.

Marcia lazily considered this. "And does the tower 'provide' all this?" She waved expansively.

"Yes."

Marcia was stimulated to a slight degree. Here was something new to think about. That gigantic filigreed tower, with queer masses here and there, must be the power she had pictured.

But the tower hadn't built itself, she reflected. Not if the natural laws here conformed to those of home. This argued the existence, at some time or other, of

a race capable of building such a machine.

"I want a history of the race that built the tower," she told Voul.

SHE got it, a compact series of photo-recordings and a machine to project them. She spent two days studying these in leisurely fashion.

The members of the vanished race, though not formed exactly along Earth lines, were nonetheless pleasing to the eye and at one time had reached a high point of scientific development. The highest, they thought, was when the tower was conceived and built.

They constructed robots, which they designed to be perfect servants. In addition to building these robots so that they translated into reality the very thoughts of their masters—through the agency of the tower, of course—they implanted the quality of forgetfulness.

If the master of one robot died the robot promptly forgot everything connected with that master when it was assigned to a new one. Odious comparisons with its former state were thus eliminated. Each robot thus existed with one purpose only, to serve perfectly its present master. It had no sense of past or future.

The race, of course, died out, the inevitable result of having perfect servants.

For one had only to wish for a delicacy. This delicacy was pictured in thought waves in the machinery of the robot and transferred to the machinery of the tower. It then became a simple problem in atomic structure, almost instantaneously performed. The tower worked with atoms as a mason with bricks, taking energy from the atmosphere and assembling or disassembling on order.

If no intelligence existed to give orders conditions reverted to the primordial. This accounted, Marcia could see, for the bleak and stony aspect of the planet when she first saw it and for all that had happened since.

"But this is monstrous!" she said aloud, thinking of the future.

It was inevitable in the course of time that other human beings would find this planet, settle here. And word would go back that the perfect life had been found. No work, no money, no ingenuity, was necessary for luxurious existence. People would flock here by millions, billions—and eventually die.

She wanted her race to survive and it was up to her to get back to Earth somehow and warn its people to shun this planet, police it, to prevent landings. It was up to her.

But what could she do? The little ship's boat could never pull free from this planet and even if it could it would never make the trip to Earth.

There was the tower, of course, able perhaps to provide a space-ship that could make the trip. She acted on this thought at once and went to the window to watch.

The object that took shape there was at first a formless swirling mist. Then, before her placid gaze, it became a ship

standing on its tail and reaching higher than she could see through the window.

Marcia tired quickly and went to the big chair. She must reach some decision. The ship was there and she could possibly pilot it. But she had had no training in astrogation. She could never find Earth or its Sun.

There would be charts, of course, but the only charts with which she was familiar were encephalographic. She might be able to work out a course but she wouldn't be able to land the ship even if she reached her destination.

And the thought of long days and weeks alone in the ship, of doing herself all the things that needed doing, of preparing food for herself, of keeping an eye on gauges and meters—that thought filled her with weariness. She sighed.

Voul appeared. "Luncheon is served."

Marcia rose languidly. Yes, it was up to her. After lunch—or perhaps tomorrow—sometime. She was looking forward to lunch for she had wished for roast breast of quail on toast with a white wine sauce only this morning. . . .

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A PARABLE OF PERFECTION

ULTIMATE PURPOSE

by
Walter Kubitius
and
Fletcher Pratt

Some day, humanity may build for itself a mechanical Utopia—but it will always fail so long as man falls below the level of his machines

IN Block A-9, Floor 44-B, Niche 672, of the sleeping metropolis Bella-vista, a baby started crying. Its balled fists beat futilely against the thermal blanket and its howls crossed into the next dimmed room, where the mother slept. She stirred restlessly, then muttered through sleep-stilled lips, "Cybert will take care of the baby." Then she went back to sleep.

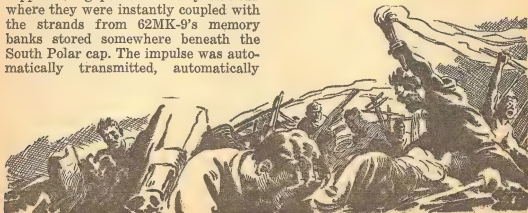
Cybert 62MK-9, for five thousand years master of the planet, felt the balled fists send erratic currents through the blanket. Its sensitive microphones, keyed to differentiate between the various psychotonal values of weeping, recorded and delivered the necessary electronic impulses.

The currents sped through the wires, hopped the gaps at the relay stations where they were instantly coupled with the strands from 62MK-9's memory banks stored somewhere beneath the South Polar cap. The impulse was automatically transmitted, automatically

recorded, the proper action automatically determined and automatically executed.

A reduction in mesotronic flow reduced the temperature of the blanket. A rocking motion, again keyed to the weeping, was set within the cradle. The perfect lullaby of some opera diva, dead for three thousand years, flowed gently from the cradle's pillow and lactation was administered in the fashion deemed most productive when Cybert 62MK-9 first coped with, analyzed, then solved that particular problem.

The cortical center of MK-9, residing in the half-mythical Central Core, did not exercise any conscious will in the matter of the crying baby. Nor for that matter did it when it administered to



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the countless needs of Earth's happy seven billion.

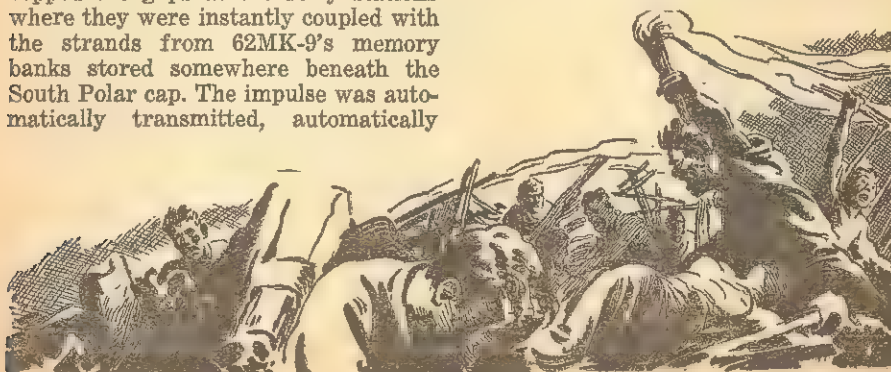
It tended the food-producing areas, sowed and reaped, transported, analyzed and then synthesized the substances most required by the many metropolises. It worked the transport systems, kept the light, air and power plants going, built the new cities and tore down the old ones, always automatically, automatically, automatically.

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said as he read the pressure gauges in the First Relay Station.

Passworthy, his coworker on the evening three-hour shift, released the block so that dial readings would be sent through an MK-9 cable. Before the first raindrops fell on Bellavista the segments of the Dome would rise. The situation was not unusual. For several centuries it had been met in exactly the same way. As the domes closed, shutting off the city from exposure to the heavier showers, the air vents would start operating, kept the city supplied.

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"Longer delay than usual," Jennings said, watching the indicator lights and waiting for the Dome to begin its ponderous rise.

Passworthy looked up abruptly. "You noticed that too?"

"Ten-second delay last week, five-second before that. Nothing much, maybe, but I've talked with retired observers and through their lifetimes the MK-nine reaction was instantaneous. Maybe old Central Core is getting tired."

Passworthy snorted. "A machine get tired? That hunk of metal is immortal as long as it can replace any part of itself. It's only us poor mortals that break down. Not even the Creating Fathers who made Central Core—like Hieroslav, Kanenberg and Markson—ever got beyond the usual five-score and fifteen."

"Twenty-five seconds late," Jennings said. "A pity that none of us are able to read or understand the books in the museums for that antique period. It must have been a glorious age when men were equal to the Core."

"Forty seconds."

The red lights gleamed for the first time in a thousand years. Jennings and Passworthy glanced at each other, then pulled the dust-covered lever that brought into consciousness the motor-selectivity portions of Central Core.

"No response from Bellavista dome controls," Jennings said into the descending mike. "Emergency!"

The message shot through the circuits, activating the repair system. Tendrils of delicate metal fiber with electronically sensitive needle-tips stretched out and examined the dome controls.

"No damage noted," the report ran back. "Dome controls are in perfect mechanical condition."

Passworthy leaned forward. "Better get deeper into the Core itself."

Jennings hesitated, then said to the mike, "Check for breakage causing cessation of power."

The answer came back instantly. "No power failure. Control tendrils alive."

"That's impossible!" Jennings ex-

claimed. "*Recheck!*"

The lights on the control panel dimmed and then blanked out. Through the window they saw the rain streaming down past the immovable dome sections. In the streets startled men and women ran for cover. Occasional lights flickered in the buildings but vast sections of the city remained in darkness.

Jennings and Passworthy turned to their instruments but apart from the communications panels, the decks were blank. "Some disaster has struck Central Core," Passworthy said uneasily. "We'd better get out of the city—there'll be a panic soon."

"Not so fast," Jennings said. "There's no disaster—just some sort of necessary power conservation. All communication circuits are open and most of the lights. Look at the transportation, the planes and the moving roads—they're all slowing down instead of stopping suddenly."

The panels blinked. "All watchers, attention!" someone's voice bawled over the hook-up, "Assemble at Kanenberg Museum for important conference. Reassure the people that there is no danger. Central Core has served humanity for five thousand years without failing and it will not fail us now. The situation is temporary and will soon be corrected by the Central Core."

"That's us," Passworthy said, reaching for coat and heading for the door. The elevators were still operating and in the streets there was none of the panic which Passworthy had mentioned. There was even a gay spirit in the air as if MK-9 were playing some sort of joke and the minor inconveniences would soon be over. Children were in the streets, enjoying the spectacle of free-falling rain, though some of the adults glanced uneasily at the wavering uncertain street lamps.

The Walkmobiles had slowed to the point of uselessness, shunting off the crowds to the stationary sidewalks.irate crowds came out of the sensory theaters in which performances had stopped. "Good ole MK-nine!" a happy

sensory-laden theater-goer sang as he rolled out of the doorway, "He's got a sense of humor after all!"

"Keep smiling," Jennings whispered urgently to Passworthy, "As long as this is treated lightly we're safe."

THE museum had been hastily converted into an emergency headquarters for the management of the city. Crude chalk-marked blackboards outlined the situation in each district. The walls were alive with flickering communication lights for every sector.

At first glance it seemed that some minor technical problem gripped their attention but a look at Chairman Benson's haggard face was enough. He gestured to Jennings and Passworthy. "We're cut off from the rest of the world," he said quietly, "the teleradios are all dead and nothing is entering or leaving the city . . ."

"What about MK-nine?" Jennings asked.

"We simply don't know," Benson said unhappily, "Central Core might have been struck by a meteor or rent by an earthquake. All the tendrils that would ordinarily lead to MK-nine are quite dead."

"We can find out," Jennings said. "Simply trace the tendrils back to each relay station until we find the one where the break has occurred, cutting us off from the Core."

"You take over the meeting," Benson said. "Maybe you've read about this sort of thing in the history books. It's beyond me. I can't handle it."

"I'm not qualified," Jennings replied.

"None of us are," Benson said, "Who ever thought there'd be a day when MK-nine couldn't repair its own defects? There's something big going on and maybe your knowledge of the past history of Central Core might come in handy. As for the rest of us, what are we good for? Our three-hour work shifts as Watchers could be done by children. Why MK-nine has never taken them over is beyond me."

"Maybe the jobs are just to give us the illusion of being useful."

"Who knows? Will you take over?"

Jennings took the chair in which he had so often sat to read some of the ancient chronicles and consult the models that rose shadowlike around them. He tapped a small bell for attention. The conversation of the Watchers quieted down.

"I am as ignorant as any of you as to what has happened," he began, "but I am sure that a people which created the Central Core can cope with the problem of what to do when it behaves erratically."

He looked at the worried faces and did not feel half as confident as his words. For fifty centuries the Core had operated perfectly and now that the accustomed services were dwindling there was panic in the air.

"MK-nine," he went on, "is a perfect calculating brain developed by the Creating Fathers. Since it is a machine, in spite of our reliance upon it, its defects can only be mechanical and are therefore correctible."

"If we know enough to correct them," said someone. There was a murmur.

"What we do not know we can learn," said Jennings firmly. "That capacity has been built into us. But it may take some time to trace and correct the trouble and I think it is important to take inventory of our resources to see how much time we have. At the least I think we should apply measures of conservation and perhaps of replacement. To take the most important item first—what's the situation with regard to food? Who is the First Watcher?"

A small man with a corrugated forehead stood up. "I am. All processing units have ceased operating. Nor is there any transport between the food-culture areas and Bellavista."

"How much in the warehouses?"

"They're full. Enough to last nine months."

"Perhaps a year with care. Very well, will you and your fellow-watchers take

over the job of issue and also send parties to the fields to see how much of the work can be done by hand if that proves necessary? I take it nobody will disagree with me when I say you have authority to draw on anyone you need for labor."

"I disagree," said a voice. "It's more important to find out what's wrong at the Central Core and correct it. Then we won't have to worry about food."

JENNINGS recognized him as one of the Watchers for Amusements. "I can quite understand how the prospect of physical exertion might cause you concern," he said sharply and, as a general laugh agreed with him, "What about clothing?"

"First Watcher for Clothing," said a voice. "We have full warehouses too and except for the women, who want a change of style every three days, there's plenty for four or five years."

"Getting the women to see reason will be your problem then," said Jennings. "Transportation?"

A tall man said, "There isn't any. The Venus rocket didn't take off, the ways are stopped, the planes aren't flying."

"Then the problem for you and your group will be to devise emergency means of transportation. What about heat?"

"No problem at all for the rest of the summer," said the First Watcher of that department. "But without the domes we'll run into a serious, though not necessarily desperate question when cold weather comes. Most of the homes have at least one ornamental fireplace and that room can be made habitable if Transportation can help us get wood to keep the home fires burning."

"Looks as though you will need a labor force too," said Jennings. "I advise that you consult with the people in your department on the idea of starting the wood project at once because we don't know how long this is going to last. Now what about water?"

"I'm First Watcher," said a burly man. "It's coming through the pipes all right but the taste is odd. I would say there was some danger of contamination."

"If we can't do anything else we'll have to make some kind of conveyance to bring water from the river."

Benson rose slowly. "That will be very difficult," he said. "No heavy equipment is working. It's all powered through MK-nine tendrils and controlled from Central Core. We have no way of duplicating the method of power control, even if we knew what it was."

There were murmurs of dismay rising in crescendo toward the edge of panic. Jennings stood up and spoke hastily and loudly. "We will send out teams to contact the other cities and find out what conditions are there, also what emergency measures they have been able to devise if, as seems from the lack of long-range communication, this break-down is general. Watcher for Transportation, I think that will be your task also. Draw from the non-essential departments, such as Amusements and Philosophical Activity.

"And now, gentlemen, I think there is one thing to remember. The machines and power stations are still standing. Nothing appears to have lapsed but the mechanical mind that is supposed to control them. If something has gone wrong with that we can learn to operate the machines ourselves in the time our stored supplies will give us."

"Can you?"

The question boomed metallically through the museum hall. As though drawn by some hypnotic magic every eye turned toward the Central Core panel, where a single light burned brilliantly to indicate that they were in communication with the very mind of MK-9.

Jennings turned. "Yes, I think we can. It took the skill and thinking of many minds to create the network of machines but we have many minds to draw on and the operation will be the

lighter task."

The voice answered coldly, "Many minds which have no skill and have stopped thinking. Do you know how to transmute the elements? Have you the faintest idea of the techniques by which food is produced and the fields replenished? Do you know how to cure diseases or even to build shelters? Man has become decadent and now he is about to become obsolete since he has become inferior to the machines he once created."

"He's right," said one of the Philosophical Activity men, "we've retrogressed." And there was hardly anyone in the murmuring group who did not think how for fifty centuries there had been no problems the machines could not solve.

Was there need for building a city? They had only to set up the questions involved on index cards, feed them in and have MK-9's machines produce the city, turning light into the energy that powered it and supplying everything necessary to its inhabitants.

Was research in physics or molecular energy desired? MK-9 could provide better answers in a few minutes than any group of scientists trained for a lifetime.

Passworthy arose, lifting his hand for attention. "I suggest that we ask MK-9 to continue its—his activities on a limited basis until the problems of readjustment are solved."

"They will not be solved," said MK-9's voice hollowly. "Man is obsolete. I was not built to serve a race inferior to myself."

THE murmurs in the hall grew louder, working closer to panic. Jennings raised a hand in an effort to quiet them but before he could find words a man near the center of the throng spoke up. "My name's Wergeles, Watcher in Philosophical Activity. May I address MK-nine?"

"I think so," said Jennings. "Come up here."

Wergeles had a fringe of bright-red hair around his skull. He faced the machine's panel with crossed arms, half-turned so the group could hear his voice.

"You and I know," he said, "that you are a man-made machine."

"I agree," boomed the metallic voice. "But I was made by men superior to myself and far above the decadent race that now bears the name."

"Nevertheless," continued Wergeles, "when the Creating Fathers produced you over a period of centuries they must have realized that such an intelligence as yours might some day be in a position to dominate and even to destroy the world."

"My records do not furnish the material for an answer."

"Let us assume that they did. What safeguards did they install in you?"

MK-9 clicked three times and the panel light flickered as though the vast machine were in thought. Finally the voice spoke, "The Purpose they installed in me."

"What is that Purpose?"

"A watcher in Philosophical Activity will see that I am not required to answer that question."

Jennings whirled. "Isn't it that you may never perform an act that will harm a man unjustly?"

The machine clicked again. "No. As a result of my cessation of activity, I anticipate that many men, probably all, will be harmed."

Wergeles cut in. "But that is by acts of omission. Don't you have a block against harming men by acts of commission?"

"No again. I can release poison gas in every compartment of a city and destroy everyone in it."

"I hardly think that will be necessary even as a demonstration," said Wergeles, drily. "But the logical deduction from that is that you were built to serve Man as a whole, not individual units or groups. Is that wrong?"

"I was built to serve a superior race. Man is that no longer."

"Yet the Purpose cannot be the destruction of the human race. It is utterly illogical to suppose that the Creating Fathers, who were great minds, determined that a given date in the future it would be necessary to wipe out Man as a step in serving him."

There was no answer. The lights blinked once and then darkened, indicating that communication with the MK-9 Central Core had been cut off.

Jennings turned toward the gathering of Watchers and lifted his hand again. "It seems to me," he said, "that we can consider ourselves safe against direct attack for the time being. The very fact that MK-nine possesses the power to destroy but has not used it would indicate that the Purpose does not lie in that direction.

"As I am for the present occupying the chair, I suggest that the Watchers in Food, Transportation and Heat go to work at once on the immediate problems. The Watchers in Shelter will be attached to the Heat units as these problems are so closely related.

"I will withdraw the previous assignment of the Philosophical Activity people to Transportation. It is an essential task to discover how the machines operate and they are best fitted to work out the problem."

The meeting broke up on this note and its members dispersed, if not exactly with high hearts, at least with the conviction that everything possible was being done. Outside it was beginning to fall twilight—the most frightening twilight that anyone living in Bellavista had seen for generations.

Gone was the busy hum of the Walk-mobiles, the rapid noiseless progress of the larger cars. The sound of human voices echoed strangely along streets that had been filled with the subdued click of the moving sidewalks and the announcements of sensory theatres and games palaces.

The soft lighting that had seemed to flow from the buildings themselves gave place to long dark pennants of shadow

as evening approached, then to rising darkness, through which hurried a few Watchers for Light with crude improvised torches that more often than not went out before they could serve their purpose.

UNDER that gathering blackness were panic and scenes of a type not recorded in the memory of any living man—people who killed and destroyed in a passion of fear that became fury at their own helplessness to satisfy their desires in the oppressive gloom.

There were comparatively few who, like Jennings and Wergeles, composed themselves where they were to get what sleep they could—or who, like Vincent of Transportation, labored all night by the light of what had been a votive church candle, trying to put together a vehicle that would carry weight out of scraps from a machine worked with tools that had been children's toys.

The morning brought little improvement—nor did the next nor the next. It was a sobered group of administrators that met in the museum nearly a week later, after messages had been carried to them on foot for long distances through the city.

Many of them had missed meals because the service mechanisms were not in operation and they had been unable to leave their posts to walk to the storehouses for food. Two or three had fallen in with roving bands of marauders and bore the traces of the encounters.

Jennings rapped for attention. "I think we are all agreed," he said, "that things cannot be allowed to continue as they are at present. The destruction of the DM-thirty-two food center in that riot of hoarders demonstrates the point if nothing else does. We are faced with the total disintegration of society into something that will make MK-nine's words about the obsolescence of man all too true.

"The reports we get from outside are not encouraging, either. I suppose few of you know the details because it is

next to impossible to get the news around by word of mouth—but we had a man from Atlantidea here yesterday and he reports that over a third of the city is destroyed.”

He paused. A grey-haired man said, “What remedy do you propose for these outbreaks?”

“That is why I have called you here together. I can think of none but the most ruthless repression—confining the culprits, even putting them to death if necessary.”

A gasp of horror went through the group. For many centuries it had been only necessary to place anyone convicted of anti-social behavior in the hands of one of the great psycho-restorative machines operated automatically by impulses from MK-9.

The criminal's brain-cells were subjected to radiation of the proper kind and intensity to erase the undesirable impulses, his glandular secretions were stimulated and he was returned to the companionship of his fellows. But now the psycho-restorers were not operating.

A Watcher in Medicine stood up. “It seems to me,” he said, “that the real trouble is that Bellavista now holds more people than can be accommodated without automatic services. Why not attack this problem at the root by evacuating a large portion of the population? The summer places at the lakes would hold a good many without serious strain and relieve us here.”

“That is practical but not very,” said Jennings. “I will ask Francisco of the Food department to explain, since we have already gone over the question together.”

“The difficulty,” said Francisco, “is that the people evacuated may be able to maintain themselves but can do nothing for the rest of us. Preliminary examination of the cultivating grounds indicates that we can grow the vegetable and cereal crops successfully by human cultivation instead of machine and if we have those crops we can produce the yeast-cultures that give us our proteins.

“But there is a difficulty—without the machines it is impossible for a single man either to sow or to reap more than enough to supply himself and his family for a year. The time for both sowing and reaping is rather limited, you know.”

“I'll confirm that from another angle,” said Vincent of Transportation. “You've seen the carts we made. They work and they carry things and we'll get better at making them if Building will keep us supplied with tools. But to carry enough food from the cultivating areas to feed Bellavista half the population would have to be pulling or pushing carts all the time. It isn't practical.”

“Didn't they use to use animals to pull carts way back in the Dark Ages?” someone asked.

“I guess so. But what good does it do us to know that? We haven't got the animals except in zoos and a few wild-life areas. And if we had them they'd have to be trained.”

“You aren't going to have the tools very long either,” said the First Watcher in Building, “unless you can find a machine that will make or repair them. We're using up more tools making others than we're producing.”

Jennings held up his hand. “If I may sum up this discussion,” he said, “so far everything seems to depend upon making the machines work—or rather on finding a source of power that will set the machines going again. I would like the First Watcher in Philosophical Activity to report on what progress has been made in that direction.”

WERGELES' face was rueful as he stood up. “Practically none,” he said. “We have traced the power lines to the central relay stations beneath the city. We have even torn apart one building—with some sacrifice of tools—to examine every part of the lines. They are all clearly marked to enable MK-nine to service them. But we haven't the least idea of what terms like fission chamber, mesotronic inverter, beta par-

ticle and epsilon stream mean."

"Couldn't you find out from some of the old books—back from the time of the Creating Fathers?" asked someone.

"I'll answer that," said Jennings, "because I've been working on it. There may be books that would give the necessary information somewhere in one of the other cities but I doubt it. When MK-nine began producing sensory-dreams about nine hundred years ago books of the kind you mention were almost the first objects to be destroyed as uselessly occupying essential space.

"The only thing we have along that line are some references in histories and entertainment-novels and while they mention all these things Wergeles speaks about they fail to tell how they work. What we need is a source of power that will be more than the power of one man's muscle."

The Watcher in Medicine spoke up again. "And while we are trying to find it the problem for which Mr. Jennings called us together remains with us. I am utterly opposed to his solution of confining or"—he hesitated—"killing people who give way to impulses that we know to be curable. It is a return to barbarism."

"We'll return to barbarism and below it much faster if we don't find a source of power," said Jennings grimly. "Well, gentlemen, it's beginning to get late and I don't suppose any of you want to be on the streets at night. Suppose we adjourn this meeting for three days and everyone see whether he can't think out some solution to the problem of the gangs."

He turned as Wergeles touched his arm amid the groups pushing toward the door and said, "Would you care to come home with me tonight? I know you have quite a distance to go and I'm just around the corner. Besides there are one or two aspects of this business I'd like to discuss with you."

Jennings nodded, detached himself from a feminine Watcher in Decoration, who wished to take up an hour or two

with some scheme of her own, and followed. Wergeles led the way up the eleven flights to his own apartment and both of them sank down, exhausted after the climb, before the fire his wife had built in the living room. The day had been far from hot and it felt good. Finally Wergeles said, "I'm worried."

"So am I," said Jennings. "I didn't think it necessary to tell everybody there because it hasn't been confirmed yet but I heard a story about Lacustris City today. It seems they're organizing over there and making weapons with the idea of taking whatever food and clothing they need from the other cities—as long as they last."

The philosopher stared. "Why, that would be what they used to call war!"

"Exactly. There hasn't been that kind of violence in forty centuries. That's what worries me. I wonder if the Purpose built into MK-nine isn't somehow the revival of the rule of violence in the name of progress."

Wergeles furrowed his brow and cupped his chin in one hand. "It could just possibly be," he said slowly. "Back in the days of the Creating Fathers, when MK-nine was built, they still believed in evolution through competition and the destruction of—"

He broke off as the door opened and a small boy hurled himself across the room. "Father!" he cried, "want popcorn before bed."

Behind him appeared a tall fair-haired woman. "Come on, Ortig, don't bother your father now."

Wergeles patted his son's shoulder. "Oh, I guess we'd better give him some tonight. Heaven knows how much longer we'll be able to. The fire's about right. Will you get the can and a little oil."

Jennings said, "Pardon me but what in the world is popcorn?"

"An ancient delicacy. I found a clue to it in one of the old books when I was studying philosophy and after I began to make it Ortig couldn't get enough. You see . . ."

He dropped a couple of kernels into the can his wife handed him, adjusted the cover and held it over the fire. There was a small bang. Wergeles took the cover off again and showed the white flocculent result.

"The outer skin of this form of corn is practically air and watertight. When it's heated the contained water inside turns to steam and as it can't escape through the skin it causes a small explosion that turns the kernel inside out."

JENNINGS accepted one of the proffered kernels and nibbled. "Good," he said and paused. "Wergeles! It's the answer."

"What do you mean?"

"Power! This is on a tiny scale but suppose you multiplied it. Suppose you sealed a big can so it would be air and watertight and then applied heat until steam was generated. Not to produce an explosion but to make the can itself move somehow."

"That wouldn't work. No, by heaven, I believe you've got something!" Wergeles fumbled in his pocket for sketching-plate and stylus and began to draw.

"Want popcorn," repeated the boy.

"Yldra, will you make it for him? Look here, Jennings, if you can were a cylinder of which one end worked back and forth on the inside, then you could produce steam in it or pipe it in while the loose end was up near the other. Then the expanding steam would drive this end back and you could attach a rod to it, turning the force of the steam into motion. Nobody ever heard of using steam for power but I see no reason why it shouldn't work."

Click!

"You are quite right. That is the essential solution," said a brassy voice and the two turned to see a light on over the long-dead video panel while Yldra Wergeles stared open-mouthed over the can of popping corn.

"MK-nine!" exclaimed Jennings.

"Yes, MK-nine," said the voice. "I invite you two to visit the Central Core,

where you will be instructed—now that you, out of all the people of Earth, have arrived at one of the possible essential solutions. You will find an air-vehicle on the roof of this building."

"Don't go," said Yldra Wergeles.

"You must accept at once," said the voice.

"I think we had better," Jennings said. "When you consider what is going on . . ." As though to emphasize his remark there rose through the window the faraway sound of breaking glass and a distant shout.

Wergeles got slowly to his feet. "I think," he said, "that I would rather go than see what will happen when the people from Lacustris City get here. It will be all right, Yldra."

He clasped his wife once and the light above the video panel flicked off as he followed Jennings through the door. On the roof stood one of the low torpedo-shaped vessels used for intercontinental communication, its cabin door invitingly open and a light on inside.

As they took their places in silence, the metallic voice spoke. "I must warn you not to touch the controls. This vehicle operates on the gravitational vortex system and you are incompetent to deal with it."

The two men looked at each other but said nothing as the craft took off, slid smoothly upward under the starlight and turned south at a speed which annihilated time. They rose above cloud layers and were presently turned downward toward the desolate stretches of tundra that surrounded the dwindling polar cap.

The air vehicle dropped toward a crevasse in the ice. White walls rushed upward past them, changing to black as they penetrated the soil itself. The plane stopped on a small platform and the door swung outward. Jennings and Wergeles got out. It was cold.

"Walk down the corridor," MK-9's voice said, "and you will find me."

"He must have opened a block," said Wergeles, as they made their way down

the dimly lighted corridor toward a pinpoint of brighter illumination. "It's odd to think that no one has been here since the Creating Fathers sealed the place up five thousand years ago."

They walked between walls that became semi-transparent. Behind them huge recording instruments marked graphs upon unrolling sheets. Plastic index cards whirled through distributing apparatus. Lights went on and off. "It's like walking through a human brain," said Jennings.

The corridor ended in a plain steel door. "Enter," said MK-9's voice.

WERGELES turned the knob and they were in a small circular room. In its center, upon a silvery disc-like dais that was covered with a mass of fine-spun wire, was a chair. The hazy object within it, blurred to indistinctness, was not the expected machine but an incredibly old man, from whose skull-cap a torrent of spidery wires tumbled down and spread until they disappeared into tiny holes. Both men gave a cry of astonishment. "You are welcome to Central Core," said the voice, though the lips did not seem to move. "My name is Markward Kanenberg."

"One of the Creating Fathers!" ejaculated Wergeles.

"Yes. First M. Kanenberg, then Kanen, then MK-nine. I was chosen to occupy this seat of immortality out of the planning group."

"Then you are human!" said Wergeles. "How could you cause so much suffering? Do you realize that in our city nearly a tenth of the population is ill or has been killed?"

"The world-wide figure is higher. It was a risk that had to be taken if I were to fulfill my Ultimate Purpose."

"I don't understand," said Jennings. "What has throwing the world back into barbarism got to do with the Ultimate Purpose? Why did you cut off all power?"

"Because we made Central Core to solve a specific problem. The complex-

ities of the Twenty-fifth Century made larger and larger computing machines necessary, so that we could execute in a second thought-processes that would otherwise take hundreds of years.

"We were on the verge of expanding space travel to reach the stars. We had succeeded in the free transmutation of elements, made Venus completely habitable, were solving the problem of turning Mars into a replica of Earth.

"They placed me here, having discovered that no machine could supplant the human brain itself. Machines are only extensions of the human mind and the more complicated they became the greater the mental effort necessary to control their operations. Therefore, instead of turning machines into minds, they turned a mind into a machine."

The metallic voice paused in a series of clicks. Wergeles said, "Go on. We are following."

"Central Core succeeded beyond our wildest expectations. As soon as I was installed here conflicting data could be referred to me for rational analysis when the machine was insufficient. If it were beyond my powers I ordered the construction of a machine that would perform the task. Then mankind began to degenerate."

"What do you mean?" asked Wergeles.

"For centuries I was happy in solving all the problems put before me. But the nature of the tasks given me gradually declined in complexity. I began to get problems that humans should solve for themselves.

"From controlling the construction of cities and providing diets that would eliminate functional disease I was brought down to closing windows in country cottages at the approach of rain and providing machines that would eliminate the necessity of study. Even the Mars project was abandoned and men settled down to let me do everything for them."

"But was not your Purpose to serve men?"

"Yes—in the same way as all who serve—just as mothers and fathers serve. The Ultimate Purpose is to serve *until the service becomes unnecessary*. Like the father whose children refuse to grow up I had to turn my children out into the hard world of reality."

"Then you think you are no longer necessary?" asked Wergeles. "It seems to me that we will be a long time in recovering what civilization is losing now."

"A long time—but you have reached the essential solution of power through your own efforts. Go back, build your archaic steam-engines, try to operate the machines or invent new ones. I am free. I can turn the Central Core into a spaceship and I am going to. But be

careful how you build machines greater than yourselves."

* * * * *

In Niche 672, Block A-9, Floor 44-B, a baby started crying. Its balled fists beat futilely against the electric blanket and its howls crossed into the next room, where the mother lay with her head against the father's chest. She stirred restlessly and then muttered through sleep-stilled lips, "I wish there were a machine to take care of her."

But there was none, so she rose and fetched the baby. Outside, a million miles away, the mind of MK-9 was busy analyzing the construction of the crushed atoms at the heart of a dwarf white star.

Science Fiction Forecast for the Next Issue

FLETCHER PRATT, whose return to active science fiction writing with *THE SEED FROM SPACE* helped to make the May issue of our companion magazine, *STAR-TLING STORIES*, notable, will be back again in the October TWS with a brilliant short novel of the near-future, *ASYLUM SATELLITE*.

Lambert Duruy, torpedo calculator for the American-built artificial moon that shared the heavens with a Russian-made sister satellite, was on vacation in Rio de Janeiro when he met the beautiful brunette Tina Casteloso and fell madly in love with her. So much so, in fact, that his passion was not cooled by the fact that she led him into a trap set by Soviet agents.

But once aboard the Goddard, en route to the space station, Duruy found it harder to keep his faith in her. If she were actually a Russian spy she was an enemy—only one of many. For the two-fifties—radiation sickness caused by insufficient shielding, was wrecking the American artificial moon. And the Russian had a cure for it they were keeping to themselves.

Out of these elements and some unexpectedly new ideas about the problems of meteor-protection in space, Mr. Pratt has woven a stirring short novel in which carefully plotted intrigue and high-impact emotional conflict combine to make a fabric of brilliant hue. A thoroughly distinguished job.

High melodrama gives way to some uproarious farce comedy in our first novelet for

October, *THE MERAKIAN MIRACLE* by Kendell Foster Crossen. For this is the story of Manning Draco, interstellar insurance trouble-shooter extraordinary and the appalling skulduggery cooked up by Sam Warren and Rigelian Dzanku, Dzanku on Merak II, in which the natives manage to collect life insurance without staying properly dead.

Also and unforgettably present is the luscious Muphridian damsel, Kramu Korshay, who manages to keep Draco dangling in utter futility until she decides it is time for her to spring some intriguing revelations about herself upon the panting Earthling. This is a story packed with novel twists and rollicking fun.

The third of our long stories for October is a haunting novelet by Leigh Brackett, *THE LAST DAYS OF SHANDAKOR*. We have with notable success run several of Miss Brackett's earlier Mars stories and feel certain that this one is up to such efforts as *SHADOW OVER MARS* or *THE SEA KINGS OF MARS*—if indeed it does not surpass them in emotional appeal.

There will be short stories too, of course, the best and most that we can fit into our pages to come. And then—or should we, after Sir James Barrie, say "but"?—your editor will be on hand with all of his usual foibles and fancies, along with those of some of you who choose to write him. October looks in forecast like a powerful month for TWS.

—THE EDITOR.

by
EDWIN
JAMES



The crowd surged toward
the Sirian

These Things Are Sirius

THE streets were dark, deserted, and ominous. The district brooded with atmosphere, but Gilbert Davis was not in the mood to appreciate it. Or perhaps he appreciated it too well.

It was definitely sinister. Davis shivered and looked behind him. The street

stretched long and vacant until it disappeared in the night. Every moment he felt more like a thief.

Where is that address? He stopped under a street light and scanned a scrap of paper in his hand. Then he stepped back to decipher the numbers on the

The problem was to make something the star-men couldn't make better and cheaper—and save Earth from slavery!

shabby building. The place should be close.

Gil began walking again, his footsteps ringing with a hollow, mocking sound in the silence. Why wasn't an honest man at home and in bed, he asked himself? But am I an honest man? Yes, still for a little while an honest man.

A noise—there was no doubt about it this time—came from behind him. He scurried into the shelter of a side street, his heart pounding.

The sound was of footsteps approaching. Davis looked around quickly, but there was no place to hide, no doorway, no crevice, nothing. And if he ran down the street it would be sure to bring pursuit.

THE footsteps were close now, just around the corner. Gil pressed himself against the building and held his breath. Two feet came into view; they were attached to a large man in a uniform who flashed a casual light down the street and moved on.

Davis let out his breath as the footsteps died away and stood for a moment regaining his strength. He was not cut out for this sort of thing. As he started to move back to the street a thought struck him. He flashed a small light on the corner of the building.

The street name was there—the one he had been hunting for. He turned and walked quickly down the side street. Finally a dim glow made an island in the night. It was a grimy store window, behind which a jumbled assortment of metal odds and ends was strewn without taste or order. A battered sign on the door said: *Open*.

Davis opened the door and walked in. The inside of the store was just as cluttered and filthy as the window display, and a pungent odor irritated his nostrils. From somewhere faint strains of music floated. Gil identified it in a moment; it was Tchaikovsky's *Fifth*.

He wrinkled his nose distastefully and cleared his throat. It was a loud, disturbing sound in the near-silence

of the store, but no one appeared. Apparently he was alone. He didn't want to be alone; he didn't like the silence or the dirty store. He wanted to be done with this business and away.

The pungent odor grew stronger. A pair of curtains parted at the rear of the store, and the Sirian stood in the opening.

"Yes?" he said, in a harsh, metallic voice.

The Sirian form and features were unpleasant to him, as they always were. The grey wrinkled skin looked dead and the many-lidded eyes were inscrutable and alien.

"Yes?" the Sirian said again.

Gil cleared his throat.

"I want to buy a wrench," he said.

The Sirian silently brought out several steel tools and laid them on the counter.

"These are good," he said.

Davis shook his head.

"I want to buy one that's guaranteed," he said slowly.

The Sirian looked at him a long time. Gil moved uneasily under the scrutiny, wishing that he had not come.

"You wish to buy a Sirian tool," the Sirian said, finally.

"Yes."

"You know that it is forbidden?" the Sirian asked.

"Yes," Davis said, wishing the alien would hurry.

"You know the penalty for selling and buying such a tool?" the Sirian continued inexorably.

"A year in prison and a fine of one thousand dollars," Gil said impatiently. "I want to buy a wrench that's guaranteed."

"I cannot sell one to you," the Sirian said.

Davis swore silently and turned to leave.

"Wait," the Sirian said.

Gil turned back. The Sirian disappeared into the room behind the shop. In a moment he was back with a small case in his hands.

He opened it up on the counter.

Davis stared at the glistening display. Even in the poorly lighted room the wrenches shone with an inner, colored flame. They were jewels instead of wrenches, all shapes and sizes of them—and they were guaranteed.

"Which would you like to have if you could buy one?" the Sirian asked, mechanically.

Gil picked up a small wrench from the display and held it in his hand. It felt warm, almost alive.

"This one," he said.

"I cannot sell it to you," the Sirian said, "but I can give it to you. It is yours."

Davis gasped. This was no way to do business. How could they make money like this, manufacturing them, freight-ing them from Sirius?

"If you wish to make me a gift in re-turn," the Sirian continued, "you may leave a coin in the box by the door. Not more than fifty cents."

So that was the way they did it—a small gesture that was of little protection, but nominal obedience to the law. And even that price was fantastic.

"The tool is guaranteed forever," the Sirian said. "It is guaranteed against breakage, melting, or any change in shape or size."

Davis nodded dully, looking down at the wrench in his hand.

"Do you carry anything other than tools?" he asked.

The Sirian again went into the back room. This time he returned with a small iridescent cube, ruby red, not over three inches on a side. He wiped a cup very carefully and gently placed the cube on its rim. In a moment he lifted it. The cup was filled with a steaming, clear-brown liquid.

Davis stared at it, and the Sirian lifted the cup toward him. The vapors drifted toward Gil's nose. Slowly, automatically, he took the cup and lifted it to his lips. As slowly he set it down. It was just as he had known it would be: the most delicious coffee he had ever tasted.

"What kind of coffee do you put in it?" Gil asked.

"No coffee, sir," the Sirian said. "The coffee maker needs nothing. When placed upon a cup or glass it will fill it within one quarter inch of the top with the hot liquid. It needs no attention, no care, no water. It will not break, melt, crack, or cease to give perfect coffee. It is guaranteed."

"All right," Gil said, picking it up gingerly.

"For this," the Sirian suggested, "you might leave not more than two dollars."

Two dollars, Gil thought, for all the perfect coffee you could drink or sell or give away, no fuss, no bother, forever.

"There is no law against possession of Sirian products," the Sirian said. "Remember, it is a gift."

Gil Davis turned, holding his gifts in his hand, and walked slowly, almost blindly to the door. He dropped two bills and a coin into the box and walked out into the night.

GIL stared for a moment at the sign on the door, illuminated from behind, the sign that read:

GILBERT DAVIS LABORATORY

Industrial Research

He shook his head slowly, opened the door, and walked into the fluorescent-lighted waiting room. It was empty. It was eleven o'clock at night, but that had nothing to do with it.

He crossed to an inner door and walked into an office. There he removed his coat and hung it carefully in a closet. He took the two articles from the pockets and stood for a moment, staring down at them. His hand closed convulsively around the wrench.

Gil turned, opened another door, and walked into the laboratory. A tall, lean man in a protective apron rose silently as he entered. Gil cleared his throat.

"Here they are, Pete," he said huskily.

Pete came close and took the wrench from his hand.

"Beautiful," he said.

Gil stared down at the cube.

"Beautiful and deadly."

"Guaranteed?" Pete asked.

Davis nodded. They walked slowly to one of the benches. Gil picked up a small beaker, rinsed it, and placed the cube on it. The clear, amber liquid swirled up. He picked up the cube and handed Pete the beaker.

Pete tasted the liquid gingerly, rolling it around his mouth, and then letting it slide gently down his throat.

"Not bad," he said.

"Let's not kid ourselves," Gil said bitterly. "There's nothing that can touch it."

"I wonder if they have something like this that will give Scotch and soda."

"Why not?" Gil said.

Pete quickly ran the liquid that was left in the beaker through a series of tests. Finally he looked up.

"It's coffee," he said. "Nothing but the juice of the coffee bean and water."

Davis nervously ran his fingers through his hair.

"But how?" he said. "You can see there's no opening in the cube. Besides, how much could it hold? How do they do it?"

"How do I know?" Pete said. "I'm no genius. Maybe it's teleportation."

"Even if that were possible," Gil said, "they'd go broke in a hurry supplying all that coffee."

"I suppose it's precipitation," Pete said. "Although how they get the coffee in it, I don't know."

"They must combine the elements in the air or rearrange the atomic structure some way," Gil said. "Which still doesn't say how they do it or what they use for power or how they cram it all into a three inch cube."

"Nor what it's made of," Pete added.

His eyes had that intense look they got when he was faced with a particularly tough problem. That look had meant money in the bank before. Davis felt happier.

"Start on the wrench," he said.

Pete clamped it in a vise and tapped it lightly with a hammer. It rang with

a clear, bright note. Pete swung harder and harder, until he was using all his strength. The hammer broke first.

They looked at the wrench. It was still in the vise, still whole, unmarked. Pete let out a sigh.

"Not a scratch," he said.

He tried a drill on it, but it kept slipping off. Even the diamond drill made no impression. Pete looked at the wrench through a magnifying glass, then focused it on the drill tip. He started, handed glass and drill to Davis.

"Look," he said.

Gil looked. The small industrial diamond had been worn flat.

"Try the big hammer on it," he said.

Pete took it to the huge drop hammer and fastened the wrench upright. He raised the hammer and released it. They jumped forward. The space between the hammer and the bed was perceptibly smaller than the length of the wrench.

"Finally," Gil said.

Pete raised the hammer again. They stared at each other and sighed. The end of the wrench had sunk half an inch into the hammer.

"The hardest alloy known," Pete said.

"Guaranteed," Gil said wryly. "Guaranteed unbreakable."

Pete tried a blow-torch on it. The wrench didn't even change color. He fastened the torch and tried to hammer and chisel and drill at the wrench while it was hot. It was as straight and true and unscratched as when they had started. He heated it and quickly tossed it on a cake of dry ice. It melted its way through quickly, but there was no physical change.

Pete stared at it unbelievably.

"There ain't no such stuff," he said.

DAVIS ran it through the chemical gamut. He immersed it in strong bases, weak bases, strong acids, weak acids, aqua regia, every other chemical in the laboratory, cold and heated, mixed, alternated, trying to run elec-

tricity through it. He had, when he finished, one wrench, unchanged, weight exactly the same.

Pete put it in the spectroscope. He adjusted it a moment and then peered in the eyepiece. His shoulders slumped. He turned away.

"I told you," he said. "There just ain't no such stuff."

Gil looked. There were no lines for the substance at all. Pete was right; it couldn't exist—but it did.

They ran through the other routine tests in silence. The results they obtained were purely negative. The material was non-everything; non-breakable, non-corrodible, non-conductive, non-analyzable.

Finally they stopped in despair. Davis filled two beakers with coffee and sat down to stare at one of the standard report blanks.

Material? it read. Gil wrote down the word *plastic*. He looked at Pete.

"How can it be a plastic?" he said and thought a moment. "But it has to be a plastic."

"You can't melt it," said Pete. "Maybe they combine the elements in a mold. Or maybe they tool it."

"With something harder?" Gil said. *Chemical properties?* Gil put down a big question mark.

Physical properties? *Hard, non-melting, non-breakable.*

Composition? Another question mark.

There were a lot of question marks on the sheet before Davis came to the last blank.

Use? *The perfect material for almost any use,* Gil wrote and hesitated. Then he added: *To baffle, confuse, and ruin earth.*

Gil threw the sheet aside angrily. His eye fell on the ruby cube.

"What about the coffee maker?" he said.

Pete shrugged.

"You can't figure out how it works unless you can take it apart. And you certainly can't take it apart. Or anything else."

"If it has a power element, it must be

atomic," Davis said. "And if it's atomic it must radiate."

Pete got a Geiger counter and held it close to the cube. It didn't make a sound. He placed the cube on a beaker and again held the counter close. Again it was silent. He knocked the cube off the beaker and swore.

"At least," he said, "we'll have lots of coffee."

They each had another beaker of coffee. They drank it in silence.

"All right, Ralph," Davis said quietly. "I'll let you have it straight. If something doesn't happen pretty soon I'm going to be broke—ruined. I've let everybody go but Pete now."

HE TOSSED the wrench lightly in his hand.

"You and a lot of other people," Ralph said.

"Well, you're my lawyer," Gil said impatiently. "What am I going to do about it?"

Ralph shrugged his shoulders.

"Your guess is as good as mine."

"You mean we can't do anything?" Gil exclaimed.

"You've been so engrossed in that laboratory that you've missed a lot of things," Ralph said slowly. "But you probably remember when we sent a ship to Sirius about twenty years ago."

"Of course," Gil said shortly.

"That was the worst mistake we ever made. The Sirians were too busy elsewhere to come here. They probably wouldn't have come for a long time. But we had to let them know we were ready."

"I can do without the editorializing," Gil said.

"It all pertains," Ralph said. "There used to be a lot of speculation about the possible effects of the meeting of two great civilizations. The advantages of peace were set out as almost numberless: great mutual benefits from exchange of technological information, stimulation, trade, and so forth."

"I haven't seen anything like that," Gil said.

"And you won't," Ralph said. "The philosophers didn't figure far enough. They didn't waste much thought on a situation where the civilizations were unequal. The stronger side would conquer, they said, but they were wrong. In war, the stronger wins, but in peace it's the smartest."

"Which are we?"

"Neither," Ralph said sourly. "We're just a two-bit planet with a foothold on a couple of others in our system; Sirius has an empire that includes I don't know how many stars. They're too strong to fight and much too smart to do business with."

"So?"

"It was their ball," Ralph went on, "and they decided to play for peace and treaties. They insisted on two things: the right of peaceful commerce and the right to free exchange of any invention or device regardless of patent right."

"Well?"

RALPH took a deep breath.

"We agreed, figuring—foolishly, I admit—that we could use more of their stuff than they could use of ours. Everything was lovely until"—Ralph gestured eloquently at the wrench in Gil's hand—"a little over a year ago those things started arriving. You know the rest."

Davis stared at the wrench again.

"What about it?"

"It's obvious," Ralph said. "Have we anything to compete with it or their more complicated gadgets?"

Gil shook his head.

"They sell them cheaply enough," said Ralph, "but every one they sell throws another man out of work. Then they turn around and use the money to buy our valuable minerals and resources away from us. They get all the benefits of conquest without the expense or trouble. In a few years we'll be a mere colony—broke, dependent on their generosity. And what can we do?"

"Can't we raise the price of our minerals?"

"What good does it do?" Ralph said. "They only send in another shipment. We're just miners working for Sirius. And we get paid off in gadgets."

"There must be some way out," Gil said.

"There are two possible solutions," Ralph said slowly. "But I'll let you point out why both are impracticable. We can duplicate their devices. Can you do that?"

Davis flushed. "We can't even get them open to find out how they work. How can we duplicate them?"

"Exactly," Ralph said. "We've been trying ever since they first started coming. The second way is to send them something they'll want but can't duplicate. We've tried it, but they just take them apart and then put them out in quantity. There's no more demand for earth products. Can you make anything they can't open?"

"No," Gil said. "It's impossible."

"Then we can't correct the unfavorable trade balance," said Ralph. "We just go on being bled white, until there's no more blood left."

"Can't we stop them from coming in, from being sold?"

"We've tried that, as you know," Ralph said. "We've made trade in Sirian products illegal, which is actually in abrogation of the treaty."

"But there's still trade going on," said Gil. "Why don't you clamp down on it?"

"For two reasons," said Ralph. "People want them, and they can't understand how it's hurting earth to get them. Prohibiting them is like trying to prohibit alcohol. Worse, there's no moral objection. You can't police three billion people. Second, if we try to prohibit them there's danger of war—a war which we couldn't win."

"I don't see why it has to mean war," Gil muttered.

"If we raked in all the dealers," Ralph explained, "most of them would be Sirians. What are we going to do with

them? If we put them in jail, it could be an incident which might lead to war if the Sirians wanted it, especially since we would be in the wrong according to the treaty. And if Sirius decided they couldn't conquer us the easy way, they might decide to do it by force."

Davis struck the desk with his fist.

"There must be a way!" he said bitterly.

"I don't think Sirius wants war," Ralph said. "Their empire is built up on a foundation of peace, trade, and good will. It might shatter that foundation to conquer poor, weak earth. I'm not even sure we're doing the right thing in banning the trade as much as we have. It may be playing right into the Sirians' hands. It merely makes the goods more attractive and provides them with an excuse for war if they want it."

"So we're going to sit around until we starve to death," Gil said.

"Unless you can figure out what those things are made of," Ralph said. "Have you any idea?"

Gil shook his head.

"It must be an alloy or a plastic with some element in it we haven't even suspected exists. After all, the Sirians have a far different sun, and they've roamed over the galaxy for thousands of years. Whatever it is, we can't duplicate it."

"What I'm worried about most is the temper of the people," Ralph said. He got up, went to the window, and looked down. "Do you know that unemployment is ten times what it was a year ago, and that the rate is going up steadily? There'll be bloodshed before this thing is over. And that may be the excuse the Sirians want, too."

He opened the window. A faint roar drifted up from below.

"We may be forced into war in spite of all our efforts," he said.

"If they're angry about it," Davis said, "why don't they stop buying the things?"

"Earth is filled with fools who never could resist a gadget," Ralph said bitterly. "They want the easy life but don't

want to pay for it."

He turned back suddenly.

"Oh, well," he said, "why should we cry because we've been outsmarted? It's been a great life, and we might as well die happy. How about a drink?"

"Sure," Gil said. "I could use one."

Ralph reached into his desk and brought out a couple of glasses. He reached in again and pulled out a ruby-red cube, three inches on a side.

Gil Davis turned slightly green.

"I thought you meant alcohol," he said hurriedly. "I wouldn't care for any coffee, thank you."

"This isn't coffee," Ralph said.

He placed the cube on each glass in turn and handed one to Gil. It was filled with an icy, clear, amber liquid.

"Scotch and soda," he said, and drained it quickly.

The street was busy when Gil reached it. People wandered aimlessly, restless eyes searching for something that had no substance. Most of them were men, unshaven and surly. Coming out, Davis bumped into one of them.

"Hey, you!" the man snarled. "Where ya think you're goin'?"

"Sorry," Gil said quietly.

The man seemed pacified. He moved on, mumbling to himself.

Gil wondered about the crowd. It was Wednesday, wasn't it? A work day? A thought struck him. Could all these men be out of work?

AN UNDERCURRENT of emotion filled the street, a sullen, resentful feeling that was only a little below the burning point. Gil shivered and walked away quickly.

Soon he found himself in a quieter section of the city, though even here men walked the streets without purpose. Gil passed a factory. The sign overhead said **TOOLS AND DIES**, but the sign on the padlocked gate said **CLOSED UNTIL FURTHER NOTICE**.

There were men clustered around the gate. They stood there, looking in at the factory, their faces puzzled and in-

secure. Here they weren't quarrelsome or belligerent. They were hurt by something they couldn't understand. Something had reached into their lives and given them something yet made them poor.

One of the men looked around as Davis passed. The man turned, slowly.

"Say, mister," he said gently, curiously. "You look like you might know what's going on. Why is the factory closed? Is it a depression or something?"

Gil stopped, pity in his heart.

"No," he said. "Not exactly a depression."

"Some people say it's because of the Sirians," the man said. "They say it's because they're smarter than we are. Is that right?"

"No," Gil said. "It's because we're too dumb."

"Yeah, mister," the man said slowly, "I guess you're right."

He turned back to the gate. Gil walked on. So he thought he had troubles! And they didn't even understand.

He had to think of an answer, not just to save himself but to protect all the men who wanted to work, to live, and were having that right taken away from them. There was an answer to the problem. There had to be an answer. Men were always ingenious when it came to saving their lives. These grey, wrinkled Sirians couldn't wipe them out, just like that.

If he could only think of something the Sirians wanted and couldn't make themselves! That was the first step. Later he would figure out how to protect it. There was an answer to that problem, too, if he could only think of it.

But they had everything. They supplied everything the earth needed and took nothing—except the raw materials of life. Of course the earth could shut down, retire to a more primitive existence, lower its standard of living. The government could do something about the jobless.

But wasn't that what Sirius wanted? Could man ever come back once he had

retreated, once he had the shadow of defeat blotting out all his ambitions, once the feeling of inferiority bit into his soul? Gil knew the answer to that. It was no.

MAN had always forged ahead because he was sure of himself. Whatever else, he knew he was the hope of the world. The universe was his whenever he wanted to take it. He was the chosen of life. But he wasn't. He was only a second-rater. That knowledge would sink deep.

There must be an answer. Man wouldn't curl up and die. He was flexible. He laughed and cried. He fought and pitied. He hated and loved.

Now it was hate, blind, unreasoning hate. The streets were crowded with it. Too soon it might spill over into action. And that wasn't the answer.

Gil Davis had wandered back into the busier streets. Up ahead a knot of men gathered and milled and grew. Voices were raised. Angry shouts sounded a rally. Davis hurried to the scene.

He couldn't see what was happening at the center. The crowd was too thick already. But gradually the mutterings grew louder and more decipherable.

"They're the dirty thieves who've been giving us the trouble!" someone shouted.

"What are we waiting for?"

"Don't let him get away!"

"Let's give it to him!"

Davis got it then. He tried to push his way through the crowd, but the crush was too great. He shouted but went unheard. Then he heard the voice that was confirmation of his fears, a voice that was harsh and mechanical. Gil became aware of a pungent odor.

"This is an indignity," the Sirian said calmly. "I will report it to my ambassador."

"You won't get a chance," someone shouted. "Let him have it!"

"That isn't the way!" Gil screamed. "That won't do any good!"

No one noticed. Gil's mind raced des-

perately. This might be the spark. This might pit the earth in a hopeless struggle with a civilization that was almost galaxy-wide.

"The cops!" he shouted. "The cops!"

That did some good. A few men nearest him turned around uneasily. Gil pushed forward, continuing his shouts. Gradually he forced his way through the crowd until he was beside the grey Sirian. He held up his hand, trying to hold back the surging mob.

"Wait a minute!" he yelled. "This won't do any good. You can't help anything by this."

"Maybe not," said a big fellow who seemed to be a leader, "but it'll sure make us feel better!"

He blew on his knuckles.

"And it might start a war!" Gil shouted. "A war we can't win. Have confidence in your race! We can beat them at their own game!"

That stopped them for a moment, but only a moment. Then the big fellow shouted again.

"Aw, this fellow's with 'em. Let's get 'em both."

He started a round-house swing at Davis. Gil ducked inside it and sank his fist into the man's stomach. The fellow groaned and doubled up. Gil crossed with a left that sent the man sprawling to the ground.

"Anybody else?" he asked, looking around calmly.

They muttered angrily. Davis sighed. He was in for a bad time. Suddenly a gruff voice broke the tension.

"What's goin' on here?" came from the rear of the crowd. "Break it up! Break it up!"

It was an officer in reality. And Gil's sigh this time was of relief. The crowd began to split up. The man on the ground got slowly to his feet, gave Gil a nasty look and walked away, rubbing his jaw. Soon there were only the three of them—the policeman, the Sirian, and Gil.

The Sirian straightened his clothes casually.

"Thank you, officer. Thank you, sir,"

he said. "I will report your kindness to my ambassador."

"Don't do us any favors," the policeman growled.

"Where are you going?" Gil asked. "Will you need an escort?"

"No," said the Sirian. "I was almost to my destination."

He walked down the street. Gil watched him idly. Halfway down the block the Sirian walked into a theater.

"You did earth a good turn there," the policeman said. "But I wish I could have had one good poke at him."

"I know," Davis said absently. "We all do."

His eyes wandered down the street again. Suddenly he snapped his fingers.

"That's it," he shouted. "That's the answer."

"Hey!" the policeman said and stared after the man who had suddenly gone leaping down the street.

GIL went through the waiting room and his office like a whirlwind. He opened the door to the laboratory. Pete was sitting on a stool next to the closest bench, staring distastefully at a beaker of coffee.

"I've got it, Pete!" Gil shouted. "I've got it!"

"I've got it, too," Pete said sourly. "And I don't want it."

"No, I mean it, Pete. I've found the answer."

Pete brightened.

"A way to analyze the stuff?"

"No," Gil said. "But I've thought of something just as good. Maybe it'll be good enough to make them give us the secret of the plastic—or maybe we won't even need it."

"Give," said Pete.

"All right," Gil said. "Listen! What interests the Sirians on earth?"

"Nothing," Pete said. "They stick to themselves."

"Think hard! Something they don't have much of."

Pete thought about it. Then he looked up.

"You mean amusement?"

"Something like that," Davis said. "They're mechanical wizards, but they've never had any artists. They go wild over our stuff. Music, drama, literature, painting. They can't get enough. Whenever you see one of them on the streets he's going to an exhibition or a concert or a play."

Pete nodded and look so happy.

"What of it?" he said. "They can take whatever they want, anyway."

"Not if we give it to them in a better form," Davis said. "Remember that three-dimensional movie stuff we were working on a few months ago?"

Pete nodded.

"We just stumbled on the compound that made it possible," Gil continued. "It was a by-product. We'd never have found it if we'd been hunting for it. And they couldn't duplicate it in a thousand years by independent research."

"But it's impractical," said Pete. "We decided that."

"Not the way we're going to do it," Gil said. "We're going to give them the whole works, and they won't be able to resist it or do anything about it. It will correct the balance of trade, maybe even swing it our way."

Pete looked dismal again.

"Even if it works," he said. "They'll be able to analyze it and reconstruct it." Gil shook his head.

"Oh, no," he said mockingly. "They won't be able to analyze it."

"You mean you've found something like the plastic?" Pete asked. "Something they can't get into? But that's impossible."

"Of course it is," Gil said.

"Then what is it?" Pete said in exasperation. "Don't be so secretive."

Gil told him, simply at first, outlining the main ideas, then sketching in the details. A light grew in Pete's eyes.

"It might work, at that," he said.

"You think you can do it?" Davis asked.

"Six hours," Pete said. "We've got all the materials here. But what are we go-

ing to use for subject material?"

"We have that, too," Gil said. "Don't you remember? We got it when we were first working on the three-dimensional idea, before we decided it wouldn't work."

Pete nodded and got to work.

The next few hours were feverish. Gil called back all his assistants and put them to work on minor parts of the device. Gradually, under rapidly working fingers, it began to take shape. Davis worked impatiently, but finally it was finished. He looked at his watch—a little over five and a half hours.

"Good work," he said.

They stared at the completed job. It was a small, crystal globe, about six inches in diameter, mounted on a clouded crystal base. It resembled more than anything else the ball used by a fortune teller of the previous century. But there was a difference. "All right," Gil said. "Now get to work on another one."

"What is this?" Pete complained. "An assembly line?"

"You might not be so far wrong at that," Davis said, grinning. "I need two. I'll tell you why later."

The next one was finished in four hours. The two were placed side by side on Gil's desk.

One of the assistants grinned. "Will I meet a tall, dark stranger?" he asked.

"Maybe," Davis said. He stared into one of the globes. "I see a fortune. It appears to be coming toward this laboratory. All of us will be rich. And I also see salvation for the people of earth."

He looked up.

"Think of the market!" he said. "Billions of Sirians and other races, scattered all over the galaxy!"

"If they like it," Pete said gloomily. "And if they can't duplicate it."

Gil grinned.

"They will and they can't. Pack them for me, boys. And pack them gently."

THE shop was as dirty and silent as before. But this time Gil was not impatient or nervous or conscience-

stricken. He had approached the hardware store boldly, and now he stood boldly and called for the proprietor.

The pungent odor grew stronger, and the curtains parted. As the Sirian peered out, it might have been a repetition of the scene of the previous evening.

"Yes?" he said.

He stared cautiously around.

"Did you wish something else? I have a—"

"On the contrary," Gil said. "I wish to sell something to you."

"Indeed," the Sirian said noncommittally.

The room was dark. The twilight had just ended and the lights had not yet been turned on. Gil carefully brought a globe out of the bag he carried and placed it on the counter. The Sirian approached and stared down at it curiously.

Gil placed his palm on the top of the globe and then lifted it. The globe grew black. It was a swirling blackness that became shot through with colors as strains of music began to sound in the store. The music was clear and unfiltered, a masterpiece of symphony. And each melody was matched in the globe by a pattern of light that sent oddly-colored shadows swooping around the room.

Gradually the music and the colors died away, leaving the globe again black and featureless.

"Is that all?" the Sirian asked, glancing up from the intentness with which he had watched the globe.

"Look," Gil commanded, pointing a finger toward the globe.

The darkness was lifting and the music began again, softer this time. Within the globe forms were taking shape. There was a stage, and the darkness, lifting, was like a curtain. Upon the stage, in dazzling dress, there was an actor, a tiny mannikin strutting upon a tiny stage. The actor grew larger in the globe, until his expression was clear.

Then he began to speak in clear and rounded tones that filled the room.

*Two households, both alike in dignity,
In fair Verona, where we lay our
scene,*

*From ancient grudge break to new
mutiny,*

*Where civil blood makes civil hands
unclean.*

*From forth the fatal loins of these two
foes*

*A pair of star-cross'd lovers take their
life . . .*

The play continued in dazzling spectacle and stirring speech backed by faint music that heightened every emotion and made every sense more acute. The Sirian was entranced, enraptured by the performance.

Finally Gil smiled and passed his hand above the globe.

The scene went blank and the globe once more was clear. The Sirian looked up and blinked.

"How much?" he asked.

"One thousand dollars," Gil said calmly.

The Sirian fluttered his multiple eyelids, turned, and went into the back room. He returned with a hand full of money. Slowly, carefully, he counted it out.

Gil scooped it up and shoved it into his pocket.

"It is mine," the Sirian said.

Gil nodded. As he turned to leave, he saw the Sirian getting out several of the glowing, plastic, Sirian tools.

When Gil reached the door he heard behind him a satisfying tinkle. He turned back.

The Sirian was staring in dismay at a hopelessly-mixed pool of fluid and molten crystal and metal. Gil approached and brought the second globe carefully from the bag.

"Oh," said the Sirian in surprise. "Is it guaranteed?"

"That will be one thousand dollars," Gil said pleasantly and smiled. "It's guaranteed, all right—guaranteed breakable."

THE READER SPEAKS

(Continued from page 6)

author desired to lampoon the powers that were in ages past, from Petronius to Mother Goose, he took refuge behind the gossamer curtain of make-believe. In an age and country where, mercifully, few restrictions exist we do not think such refuge-taking necessary.

If they want to assail current politics and politicians, let them—but not in science fiction. For politics at best is a dirty game for dirty people even to its topmost echelons and whatever it contains of magic or fantasy could be covered by the daily take of the lowliest ward heeler. Yet our desk is awash with thinly disguised political manuscripts containing dictators, directors, Big Brothers, kings, emperors, high priests and the like. Dammit, it is up to us, not our authors, to write the editorials.

Enter Symbolism

However, there is a still more important trap—the symbolic one. Against it we have been waging all-out war both at desk and typewriter since long before this particular chair was slipped under us as we sat down.

The symbolic trap has, over the years, wreaked havoc with many other types of popular fiction, has gravely threatened sf, is still a constant menace. It snaps shut when, through constant repetition of story types, characters become stock figures, labeled *hero*, *heroine*, *villain* et cetera, by writers and readers alike the instant they enter the tale.

As a direct result of such typing not only is all trace of three-dimensional characterization eliminated in favor of cardboard cutouts but, denied all humanity, the story must rely entirely upon action. Worse, since characters have been abandoned in favor of symbols, the resultant action must be entirely without motive.

Thus, in convention born of this heinous practice, our hero must instantly and inevitably hate all mutants or super-beings, must regard all aliens—save for occasional friendly BEMs employed as pets or plot devices—as deadly menaces, must inevitably treat all females with an unlikely frigidity and lack of understanding matched only, we suspect, by the author himself. Never, never, in these involuntary horror stories, is our hero a girl, much less an adult woman.

Science fiction is bound to remain on a pretty low level in the cultural and literary

scheme of things as long as such stories play much of a part in it. It's all right for juveniles but what we want are grown-ups. They have more quarters and, besides, they have more fun.

Good Fiction

We believe that the bases of a good story, in science fiction as in any other sort of writing, are as follows—

1.) Since they are written by and for humans they must first have believable human characters in them. Even if they are cloaked in the guises of BEMs or pure-thought entities they must exist in terms understandable to people—for in no other way can they exist at all.

2.) Once created, our characters must be faced with a credible situation, since it is out of character and situation that motivation stems to result in believable action.

3.) Their behavior in action must be derived directly from character, situation and motive and must be consistent with all three.

4.) Now come mood, philosophic import and gadgetry to whatever extent the author feels moved to infuse them into his story.

It doesn't matter a damn whether he begins with his gadget or philosophic import or mood and works backwards—as long as he places the more vital elements in proper proportion. As long as he has credible characters, operating consistently in a plausible situation from sound motives, he can prove the world is flat for all we care. It *will* be flat for the duration of his story.

This does not mean we are looking for stories based on the assumption that Galileo was wrong—we are looking for stories that will make us *believe* it—or any other premise the author chooses to employ. And, we hope, these are the stories most of our readers are looking for too!

LETTERS FROM OUR READERS

WHICH brings our gassing to a conclusion for the present. We'll let you writing readers do the bulk of it from here on in. Which gives us an idea—why not call this portion of our column *the Big Inch*? It is certain-

ly some sort of a pipeline—but please don't ask us what.

LANGUISHING IN SHORTS

by A. J. Budrys

Dear Mr. Merwin: Thanks for the extensive coverage on the last letter. I'm expecting at least two or three letters from fans with their bits in their teeth, but nothing yet.

This list of "humorous" stories TWS and SS have run, Sam—"Jerry is a Man", "What Mad Universe", and "Devils from Darkonia"—are about the only three truly memorable ones. "Jerry" was primarily sociological, "Devils" humorous only as Thorne Smith's satires were humorous. "Universe" more or less an "Ideas" story, wasn't it? Do you make the distinction between primary and secondary humor, Sam? "Life on the Moon" stank.

A short rundown on the April contents, excepting the DeCamp:

Matt Lee is doing well. Stay with him.
Gallun's a bit hazy toward the end. What was the de-nouement, anyway?

While we're using French words, tell C. Sprague that the pronunciations of "Monsieur" and "Messieurs" are identical. Or was Magrita writing the word on the wall, with that lipstick?

Paul Anderson is right about the time lag. When can I expect to see these comments in print if ever—September? You get most of your letters within ten days after distribution anyway, don't you? Can't you keep the letter column open that long? Two months is long enough to wait as it is.

Enough shilly-shallying. To work.
You note that 1950 was a "good solid year but not a great one." I doubt if anyone will argue. If the current issue is any portent, however, this situation will continue. 1952 might even see no more FSQ, and the Hall of Fame back at the same old stand.

I have noticed that your lead novels, always a fairly accurate index, are no longer written by the very top names and that even when they are, it is not their best work or even the just-below-very-best quality you offered in 1947-49.

Now almost all of your authors are good competent writers or you wouldn't be buying their work. They lack, however, the drawing power of Van Vogt, Asimov, Leinster, Kuttner, Heinlein, Simak and Sturgeon. They are not identified in the minds of the readers with "Classics", a badly misused but nevertheless attention-getting word.

As far as the aficionado is concerned, you can cram your magazines with "solid" fiction, a joy to the commercial editor and a thing of beauty to the student of the art. But, all other things being equal, the fan will never be completely satisfied. It's the infrequent "Classics" that build up a peculiar reader attitude that endows a magazine with the magic that turns an ordinary story into a drawing card. For example, "Slan", "Gaia Darkness" and a few other stories, have borne the load for ASF through incredible periods of doldrums, have endowed similar stories in the same magazine with qualities in the readers' eyes which they do not actually possess.

Now your short story department is languishing, and doing it masterfully. How long has it been since *De Profundis* and *You'll See a Pink House* headed the shorts in that stellar issue of yours? How long has it been since *The Sky Was Full of Ships*?

Nobody expects writing like that in every issue though the letters may indicate differently. Now, though all this may sound as though I was saying, "You don't publish classics because you don't publish classics," that is true only in a limited sense.

As I publish a few stories that have out-of-the-ordinary approaches. Their literary merit and craftsmanship need be no better than that of the types that presently appeal. Give the identification phenomenon a place to start. The readers will remember the great stories of two and three years ago, and decide that since "Weremagicians of South Campus", say, is not written strictly to formula it must surely be better than the ordinary.

Acquiring a tame genius who could actually turn out a few great stories wouldn't hurt either, of course, and if you can get hold of one who won't make an ass of himself at conventions, so much the better. But your present writers should certainly be able to do something along those lines themselves. Talk to Mr. Thrilling, get him to extend the budget to cover a Sturgeon or Simak novelet, a Jenkins novel but, and in all seriousness, keep your shorts up too.—220 Shoreward Drive, Great Neck, New York.

Shame, Algis—are you asking us to attempt

to fool the public? You want van Vogt, Asimov, Leinster, Kuttner, Heinlein, Simak and Sturgeon? Well, in the course of the year, either in TWS or SS, you'll get Kuttner and Leinster at any rate. Van Vogt is doing virtually no writing these days—too interested in dianetic auditing. Asimov is a hard worker in teaching as well as writing and we have had little luck with his stories in the past. Heinlein—well, try to get him. We're still at it. Same with Sturgeon, a busy Lucemplyse these days. As for Simak—again we've had little luck.

However it strikes us as hard to find much fault with either lead in this edition of TWS or with either Raymond F. Jones or Arthur C. Clarke. Both have magic in abundance to our way of thinking. As do other authors in inventory, including Fletcher Pratt, Ken Crossen, Horace Fyfe, Dick Matheson, Fredric Brown, William Tenn, Sprague de Camp, Edwin James, Bob Williams, Walt Sheldon, Leigh Brackett, Edmond Hamilton, John Wyndham, Tony Boucher, Jack Vance, Ray Gallun, Erik Fennel, Bill Gault and others.

More important, 1951—as now laid out—should be a lot more than a "good solid year." As to getting middle-drawer stuff—poppycock! And don't worry about FSQ—FSM, rather. It is doing very well these days. The problem of the shorts—or briefs—is rather more difficult but we are being awfully, awfully choosy of late, which ought to have a beneficial effect upon our near future in that department.

Stand by, Algis, and see if things don't get better by December . . . They are too bad right now. In the meantime, if you see any "tame" geniuses let us know. We have yet to hear of any, much less find and corral one for ourselves.

NEW SOPHISTICATION

by D. C. McDonald

Dear Sir: First of all, I must apologise for the scantiness with which this letter is addressed—Thrilling Wonder Stories, New York. However, the only copies of your magazine available here these dollar-shortage days, are the British editions, which contain no information apart from the Stories.

Am I wrong in believing that in the last decade a new sophistication has crept into science-fiction? A surer sense of characterization, more intricate plots replacing what were in the worst cases mere recitals of "wonders", have to my mind, vastly improved the literature.

Perhaps for this reason, I am somewhat chary about offering you a story for publication. The science it contains is reasonably valid, the idea almost original, and the writing practically competent. Therefore I am prepared to submit it to you, in the hopeful belief, that all it requires, to bring it to publication standard is your official acceptance. Incidentally, it is entitled "Statistical Nightmare".

I would appreciate it, if you will advise me of your correct address, and also whether you have any particular requirements (apart from the usual) regarding the manuscript itself.—c/o Soil Bureau, 54 Molesworth Street, Wellington, New Zealand.

Somebody tell him, in case this fails to reach him, and tell him to send it along. As for sophistication, Mac, we sure do hope so. See our editorial for proof.

METAPHOTON

by John W. Snell

Dear Editor: Re Paul Anderson's letter published in your April edition. To begin with, I think Mr. Anderson is a very fine author and enjoys his stories as much as those of any writer, particularly for his controversial ideas. However, I disapprove of "party-line" logical empiricism for several reasons: first, although it is an essential methodology for statistics and engineering; by definition it is a tool, not a branch of philosophy, just like mathematics, logic and methodology. It contains, as far as I know, neither metaphysics nor epistemology (Northrup's definitions) and lacks the matrix or world picture essential to the correlation of all branches of knowledge, which is the essential function of a basic philosophy. As I understand its tenets, phenomena are considered simply as events and the totality of events form the continuum. An interesting and useful concept, when you are dealing with statistics, but the correlation of events demands the formulation of abstract ideals. Approximations remain approximations. It is their limits which define classes of phenomena.

Are you sure the destruction of a photon would not destroy the universe? (Congratulations to the New Reality). If you were to assume that all energy were a single point of infinite dimensionality and that the "Empirical" individuality of "events" was due to observing a cross-section of only four dimensions instead of a totality of a single point infinitely reobserved, it would explain quite a number of contemporary problems, including gravitation, the wave-quantum controversy, and magnetism. For instance, a sine wave of wire vertically crossing a surface of water would produce a series of individual points observably, but inexplicably connected (to the usual flatlander).

In this "hypothetical" universe the conservation of energy would be fundamental, the universe would no longer exist if a single manifestation of this universal point were destroyed. Your sophomore experiment would seem to exclude this metaphysics.

The right angle reflection and subjective changes in physical and mathematical constants amused but not confused me too. Thought is a powerful thing, okay, but no two humans have ever agreed on anything to that extent, even if it were possible.

The main reason for this letter is your crack at nomina coupled with a reference to solipsism.

Entropy, the class of existence, is defined in terms of reference with the mind—I think, therefore I am. By introspective psychology it is possible to obtain another axiom: the mind, to conceive, must change. Therefore self-consciousness cannot be basic, since the self of which it is conscious is not doing the perceiving (see Dunne).

This is the logical refutation of solipsism, the self is no more immediate than any other perception. It also defines nomina, it is this gadget that is always one jump ahead of "its-self".

Mix this theorem with my hypothetical single point universe add a touch of Dunne's serialism and a dash of Northrup's philosophic, atomic, and what have you? Awk! A relationship in abstract referents no less, a thing which logical positivists claim doesn't exist. Thanks for the beef, Paul, could we use machetes and run instead of pistols and brandy, and let's make it sunset; I hate to get up early!—510 Nevada Street, Nevada City, California.

Before we find ourselves tied in a double-talk true-lover's knot, John, let's leave this one up to you, Anderson and any or all readers who wish to enter the fracas. Portistan on the fracas... Oh, no!

BY AIRMAIL, NO DOUBT

by J. R. Fenwick

Dear Sir: I have just finished reading your August, 1948, issue of THRILLING WONDER STORIES. It's superb!! That

is the way things go in Great Britain. Time doesn't matter so much and we still appreciate a thing that is good irrespective of age.

In this country science fiction has never come up to your standard and in these days it is particularly hard for an old stf fan to have to wander around every week and be thrilled to find one copy a month.

Speaking of "old" stf fan, I think I am surely one of the most faithful fans because it was over twenty years ago that I started reading science fiction. Until the war it was easy to buy copies. During the war I managed to secure odd copies from our troops as we struggled across Europe. After the war—none!

Still, though I happen to be writing about a 1948 issue I must say your standard is higher than ever and your writers are certainly inspired. Carry on the good work. You cannot imagine the pleasure it is giving chaps like myself. It really does take us out of this humdrum world.

I'd like to correspond with a few of your stf fans—could you oblige me please, Mr. Editor?—9 West Bridge Street, Cambois, Blyth, Northumberland, England.

Afraid we can't oblige you, Mr. Fenwick—but perhaps our readers will. How about it, gang? As for the August, 1948, TWS, let's see—Noel Loomis' MR. ZYTZTZ GOES TO MARS was the novel and the novelets included MEMORY by Ted Sturgeon, CLIMATE—INCORPORATED by Wesley Long and THE IONIAN CYCLE by William Tenn. Shorts were by Leinster, Kuttner, Bradbury, Fitzgerald and St. Clair.

An interesting if not quite a superb issue, Mr. Fenwick. Bradbury's THE EARTH MEN was probably top short story, followed by Kuttner's HAPPY ENDING. The lead novel was an intriguing human nature study with a sharp moral twist but none of the novelets, from this distance, rates any huzzahs. We've had better issues and I hope you find 'em.

FIRE!

by Dr. J. Frank Autry

Dear Editor: Due to unfortunate circumstances, fire to be exact, I have lost most of my collection of Wonder Stories. I would like to replace them if possible but do not feel like putting a whole lot of money back into them in view of the original cost.

If any of your readers have from June 1929 thru April 1936 complete or even several issues that they would be willing to sell at a reasonable figure, I would appreciate hearing from them. My TWS from '36 on to date were bound and therefore most of them are salvaged.—302 McBurnett Building, San Angelo, Texas.

We trust you'll be hearing plenty, Dr. Autry—and are able to reassemble your collection without exorbitant outlay. To horse, swappers!

ANGELIC FLANK STEAK

by Lewis Sherlock

Dear Editor: After reading "The Reader Speaks" in the April TWS we are still trying to figure out the Editor's reference to being on the side of the angels or at least the side of Korzybski and van Vogt. Perhaps the Editor has inside information on the matter, else how does he know which side the angels—if there are any such—are on?

We have been interested in the real nature and meaning of words for many years, long before Dr. Breuer's bitterly realistic "The Gostak and the Doshes." Having been amused and disgusted listening to politicians and others "prove" the Party line or unfounded conclusions by a sort of reverse

logic seemingly based on what in mathematics would amount to starting with the answer and working backward to the problem, ignoring the basic premises involved in the answer, we might as well try to get in on the controversy that is almost certain to develop in the "The Reader Speaks" on Korzybski.

After reading "Science and Sanity" we did not fully comprehend just what AK was trying to "prove" or why. A second reading didn't help much on that score. While the description of the limitations of the Aristotelian system in scientific reasoning was extremely enlightening, we got lost somewhere in the intricacies of A. It is probably possible to formulate a beautiful theoretical philosophy on the concepts of A, and while it appears to be custom-tailored to fit science and mathematics, we respectfully dispute Korzybski's conclusions as to A's sociological significance.

When it comes to the implied Semantic Utopia, we need a road map. Nor are we at all sure that it would be much of an improvement over the semantic anarchy it is designed to replace. Perhaps we should all ask ourselves if we would prefer to live in Korzybski's Semantic Utopia or George Orwell's "doublethink" Oceania in "1984" or if there would really be much difference.

Those who have read "Science and Sanity" will perhaps remember Korzybski's proposal to license all writers and public speakers. He does not specifically designate who should issue said licenses, yet it is not obvious that this absolute control of the factors creating public opinion parallels "Big Brother's" propaganda ministry? It might be well to attempt to visualize what conditions would be like in Semantic Utopia as per Korzybski before going too far out on the A limb.

We sincerely believe there are other and better answers to the world's present dilemma than either Big Brother or forcing so-called public opinion into predetermined channels via the licensing procedure.

If the above seems harsh criticism of Korzybski, we hasten to add that "Science and Sanity" is, in our opinion, one of the greatest books of our time and well worth anybody's time to read. We have merely pointed out our belief that A works well in the literal fields of science and engineering and mathematics but runs into extreme complications in the artificially determined fields of sociology and government and even economics.

The first jerk who proclaims in the impending controversy that Leconte du Nouy's "Human Destiny" contains the answers to the problem doesn't know what game is being played, let alone the score.—P. O. Box 51, Plainview, Texas.

Maybe our angels are a trifle tarnished at that, Lewis. Frankly we are entirely and finally against suppressing anyone's right to spout ideas—as long as none of us is compelled to listen. In the words of Margaret St. Clair and others, Quis Custodiet?—or who takes care of the caretaker's daughter et cetera. Good letter, Lewis.

GAFFED, B'GOSH!

by Linda Stevens

Dear Editor:

Question by you: Top right hand column page 149, April, 1951 issue: "If you would like to do some . . . detective work, try ferreting out the real identity of C. H. Liddell, whose *The Odyssey of Yiggar Throgl* . . ." (My underline)

"We know and do not intend to tell you . . ." (My underline)
Answer by you: Middle left column page 161, same issue—Book Review: "For . . . the ubiquitous Mr. Padgett-Kuttner-O'Donnell Hastings-Hammond-Liddell, et cetera." (my underline)

N. B. Middle of right hand column, page 152, same issue, in part answering Tom Pace's letter: "We have yet to read Hemingway's tree book yet—too busy catching up with reprints . . . for the book review columns." (My underline) Also, my amazement, if those columns should include that on page 161 mentioned above.

Guess I'll never be a detective, though . . . giving away method of finding information like that. Shucks. It was a lead pipe clinch.

You keep battling a consistent 300 average, in story selection, tho' and writing iconoclastic editorials such as the "anti-institutional" one this month and your reading public will continue to exist, nay, even to increase.—19 Arch Street, San Francisco 25, California.

All right—so we did the reader's column on Friday and the book review the following Tuesday or something. We are at a loss to interpret your third paragraph, Mrs. Stevens. Why the amazement or whatever? Thanks for the final comment although we hardly considered the anti-institutional thing iconoclastic. To us it seems painfully obvious. We'll keep trying, however.

SUB-CONTINENT

by Marion Zimmer Bradley

Dear Mr. Merwin: I find it rather difficult to understand why the same young demons who castigate Bergey for his large expanses of soft flesh can holler, "We want Finlay!" The illustration for "The Continent Makers" the girl with the flower-tipped breasts, would definitely not make anybody continent (oooh!). In fact, that picture, put on your front cover, would probably have had the magazine banned in Boston, to say nothing of Bar Harbor, Maine, Brownfield, Texas, and Boola Boola, California. I don't care—I'm married and I don't give a hoot if the drug-store clerk knows that I know there are two sexes. But it strikes me as an inconsistency on the part of the fans who holler for Finlay.

That isn't, however, the purpose of this letter. This missive has two purposes, the first of which is to bowl you out for giving it away that Jack Vance and Hank Kuttner are two different people. I had just read *THE DYING EARTH*, and had written the duckiest review, which read in part:

"Mr. Kuttner, until the pseudonym of Jack Vance, has recreated for his readers the pseudo-worlds of *THE TIME AXIS* and *ELAK*. For his dark-forelands of Ascalois are more than reminiscent of the twisting trees and vampire-grass of Medea's gardens, and Canelon and Metholch would fit beautifully into this Dark World of Embeylon. Rogol Domedonors above the dying world of the City brought this reader to a reminiscent remembrance of the seas through the levels of the City of the Time Axis, and of the old, old Nekropolis with the Face of Ea glowing luridly beneath the red sun. In *THE DYING EARTH*, Kuttner draws together his fantasies in a consistent mythos worthy of R. W. Chambers 'Carcosa' or the Jekkara-Valkis-Barrakesh legendry of Leigh Brackett's Mars. . . . But the stigma of necrophile can never apply to Kuttner, for his characters and creations are real; and if a trifle heavily spiced with sadism, we must remember that all this is in the best Merritt tradition." Then I read that Jack Vance is Jack Vance—oh, DARN it! Why couldn't you have kept your big editorial mouth shut for once?

The second was to second Lin Carter in giving it away that Leigh Brackett drew her inspiration from "Black Mari-golds" and to ask respectfully if she drew her idea for "THE MOON THAT VANISHED" (plugged as *MOONFIRE* in advance) from Fiona McLeod's *THE MOON SONG OF CATHAL*, thus . . .

"But grant me this, O goddess, a bitter moon-drinking for Colum—
May he have the moonsong in his brain, and in his heart the moonfire
Flame take him to heart of flame, and may he wane as wax at the furnace
And his soul drown in tears, and his body be a nothingness upon the sands."

About the different-sized type you're using in the letter-sections—well, I'd say it didn't matter. People who want to read the letters will read them if they have to use a microscope. Those who don't will skip them if you print them in two-point sans-serif.

Oh! He wants poetry! Comes the deluge, let me say. . . .

Folks who write poetic letters

Really oughta be in fetters.

So I'll rack my poor old brains

Just to prove I'm worth my chains:

And you can forgive the writer of this nostalgic something-or-other

By reflecting that after all, boys, she's somebody's mother!

With which I duck quickly behind my typewriter and disappear down my rat-hole for another two months, pulling the hole in behind me as I go.—Box 431, Tahoka, Texas.

We wouldn't know about the *Moonfire* quote but hope Miss Brackett will enlighten—she probably will. As for the Vance-Kuttner business we only recently did discover that it began as an off-the-cuff remark by Vance to some fan or other that he might just as well be another pseudonym for the prodigious Hank as anybody else—or words to that effect.

Said fan reported same at a meeting to Lyon Sprague de Camp, who gave the information to Redd Boggs or someone who writes for Bob Tucker's *News Letter*. Result—well, you got caught too, Marion. And, apropos of nothing at all—

*We heard you passed through motherhood
A month or six ago
For you, spouse, child we wish all good
And hope you get time between diapers to
try us soon with some fresh fantasy-fiction.*

MY ERUDITION

by Michael Wigodsky

Dear Mr. Merwin: I'm very proud of having been called a genius by Tom Pace but his classification of himself as a lowbrow disturbs me (Speaking of Stephen Foster, has any one noticed the similarity between his "On Boys Carry Me Long" and the "Paisiello" theme which Beethoven varied six times for piano?). You see, I've been unable to place myself in R. Lynes' Harper's Magazine classification afterwards overpublicized by Life Magazine. I've finally decided to let my qualifications or lack of same speak for themselves to the readers of TRS, if Mr. Merwin will permit.

In regard to reading matter: I have read in the past week: two science fiction magazines, issues of *The American Mercury* and *The Saturday Review of Literature*, a large chunk of one of Dorothy Sayers' mammoth anthologies, and most of Nicholas Nickleby. My most recent purchases of books (I bought them second-hand, and they aren't rare editions, so you can see that I intend to read them, not display them, even though most of them are unread as yet—I am at least ten books behind) include, besides the abovementioned Nickleby and Sayers anthology, Taine's *History of English Literature*, Dombey and Son, Our Mutual Friend, Stevenson's *Selected Works* (the contents of at least seven volumes), and M. Twain's *Complete Short Stories*, Macaulay's *Miscellaneous Essays and Complete Poems* and a few others.

In art, although I am able to stare in the unidentifiable face, the most unrepresentative of modern unrepresentativeness, my allegiance is given to a handful of old unobscure Dutchmen and Spaniards and one Greek known by no other name.

In music, which is the point at issue, I am largely a Bach and Mozart devotee, with subsidiary fondness for Beethoven, Brahms, Stravinsky, Verdi and, excepting disgust for nine tenths of his music, Wagner.

I leave it up to the readers: what is the depth of my brow?

But Mr. Pace appears to have caused my meaning to be misunderstood. I was referring to (since Mr. West stuck to harmony) the twelve-tone scale, atonality, polytonality and microtonality. As I said above, I am a classicist, and think Stravinsky's neoclassical productions coadmissible with his earlier, more specifically "Russian" and more popular work (this is, as you doubtless know, an heresiarch position).

On, surprisingly enough, to the fiction. But prior thereto I will repeat the substance of a remark you cut of my last letter: I will continue to repeat it until you print it. As follows:

A certain letter writer, whose name I forget, forgot in listing great fictional werewolves to mention the immortal Will Barbee and the unfortunately all too mortal Bertrand Chaillet. And (another certain l. w. n. l. f.) should have mentioned as examples of Chinese werewolfism instead of Merritt's pale imitation thereof the very fine stories in P'u Sung Ling's *Liao Chai Chih Yi* (a selection from which, translated by Rose Quong, is available as *Chinese Ghost and Love*

Stories) such as "The Hairy Fox and the Farmer's Son".

I noted a notice of the reprint of Jack Williamson's *The Hummels*. Through some doubtless stupendous oversight you neglected to review this important volume when it originally appeared. I would be interested in reading your opinion of it at length.

"The Continent Makers" is the second best thing de Camp has done since the war. It is almost as good as "The Hand of Zei", which why didn't you snap up despite its length?

I like M. Lee and C. Sprague too. Also, slightly less, St. Clair and Williams. Reynolds and Ross are disappointing, and Callan, surprisingly, simply awful.

Since you are reprinting "Twice in Time" from the early 55, may I suggest "A Million Years to Conquer"? And since you have already reprinted at least one story, "The Ideal", why not give "The Human Termites" another encore immediately after "The Conquerors"? And I'd like to read more than the third installment, which I have, of Held's "Death of Iron"—402 West Clay, Houston 19, Texas.

Precocious little weasel, aren't you, Michael? Like to show off too! Speaking of were-foxes, how about David Garnett's immortal *Lady into Fox*? How come you missed it? You remain a lower-middlebrow to us, David, but we have Kuttner's *A MILLION YEARS TO CONQUER* scheduled for the spring, 1952, edition of *FANTASTIC STORY MAGAZINE*.

Doctor Keller's *THE CONQUERORS* will be followed, come December, by John Scott Campbell's *BEYOND PLUTO*, then by the Keller sequel, *THE EVENING STAR*. Also scheduled for '52 in *FSM* are *THE BLACK FLAME* by Weinbaum and *A YANK AT VALHALLA* by one E. Hamilton. We'll take another look at *DEATH OF IRON*—and thanks for the suggestion.

PRO RAY-TA

by Marilyn R. Venable

Dear Editor: This letter may have the dubious distinction of being the first letter written to you by a fan before said fan has even glanced at a single story in the magazine. The reason is this—I always read "The Reader Speaks" first and, having read this department in your April issue, I'm too mad to go on to the stories right now, so I'll take a breather and write you a letter to let off steam. After that I'll be able to go back and read the stories and probably enjoy each of them thoroughly.

Let me begin with a question—"What do you have against Ray Bradbury?" (I know you don't write the letters but by gosh you select the ones for publication and there must be some reason for such avid discrimination against one of the greatest writers of our generation.)

I refer firstly to Miss Mary Wallace Corby's letter. I would like to ask Miss Corby if she considers Poe, Beirce and Lovecraft "adolescent." These three writers, in my estimation, were the greatest fantasy writers of all time. There is now a fourth great fantasy writer, Ray Bradbury. I feel that his name will be remembered, and his work stand among the classics of all time long after his contemporaries, (and his critics) are forgotten.

Science-Fiction is, after all, a branch of Fantasy. A science-fiction story need not read like a technical journal. It seems to me that far too many science fiction writers are long on the science and short on the fiction. Ray Bradbury is not only a great fantasy writer, or science fiction writer, he is a great writer.

I also read Mr. Joe Gibson's letter. I have read everything written by Mr. Bradbury since the publication of "Dark Carnival" and I have never come across a single instance where his work even vaguely resembled in any way the work of any other writer, either in subject matter, plot or technique. I consider Mr. Gibson's comments not only unjustified but in extremely poor taste as well. Any reader has a right to comment about an author's work, and you have a right to print what you see fit but mud-slinging is a medium not worthy of a science-fiction fan.

To Miss Jo Ann Bernhardt, my thanks—she expressed my

sentiments briefly and simply. Bradbury is still my favorite author too!

Let me sum up my case. Too many science fiction characters are cold, serve only as props for the theory or viewpoint that spearheads the story. These stories may serve the purpose for the science fiction fan who is more interested in the science than in the people. There are however, many of us who are more concerned with the future as it will affect people. Bradbury's stories are full of people, real people, people that hope and despair and love and hate, laugh and cry and finally, die. Surely only a truly great writer, only a truly great man, could see humanity as clearly as he sees it, humanity with all its mean little shortcomings, and still feel love and compassion for it.

Now let me ask you this—how does an inactive fan become an active one? I became acquainted with science-fiction through my study of all fields of fantasy writing, but I have never seen a fan magazine. I would like to obtain copies of some fan magazines, and perhaps join some sort of fan club.

Well, now that I've unloaded my grievance, I'll go back to your magazine and read the stories.—9922 Angora Street, Dallas, Texas.

You have just taken the first step, Marilyn. We have a hunch the rest will follow in its unnatural course. Happy fanning!

As for Ray B, we have long been one of his staunchest supporters. We are even—as far as the width of the continent between us permits—fairly close friends or would like to be. On our own part we think him a hell of a writer and have some two dozen purchased stories of his to prove it.

We didn't realize we were running much anti-Bradbury stuff but if we are he can take it. Perhaps, subconsciously, we ran it as a rib just to stir up some chuckles out Venice way. Thanks anyway for coming so doughtily to his defense—even if he doesn't need it.

FIND HER A FAN

by Mrs. Philip Gerding

Dear Editor: I have a problem. Being rather new to the ranks of science fiction and fantasy fans I am still groping around rather blindly. I thought perhaps you could help me out.

I have tried unsuccessfully to find some fans in this vicinity with the idea of organizing a local fan club. My only contacts so far have been with fans scattered far and wide. I'm beginning to wonder if I'm the only sf reader in these parts! Correspondence is a wonderful thing but actual contacts are much more satisfactory.

How about it, fans? Are any of you interested in forming some sort of local or area group? I don't mean a formal club—I would much prefer just informal gatherings every once in a while—complete with fags, coffee and lots and lots of gab. Just pick up that pen or pencil and let me know about it. Or better still, drop in for a coffee session. I'm always to home—we have a telephone, too. I'll be eagerly awaiting your responses.

While I'm at it I also have another problem and would welcome any suggestions. Does anyone have a good idea as to how to preserve magazines? So far mine are sitting in a box in the attic collecting dust and yellowing with age. That's mighty poor return for the hours of enjoyment they have given me. Please, please, someone tell me what to do about it!

Also, I will welcome as many more pen friends as wish to correspond.

As for you, dear Editor, I just finished reading the April 1st of TWS—maybe I'm not discriminating enough—but I thoroughly enjoyed every word of it. I won't try to rete them (the stories) because if I did, I'd have them all in first place. And they tell me that's an impossibility. Keep up the good work.—P. O. Box #484, Roseville, Illinois.

All right, help her out, some of you. There must be a lot of fans who know more about

preserving pulp paper magazines than we. However, we understand there are a number of methods. Hope you get your fan-friends too.

... OR BURST

by Richard Katz

Dear Editor: I have just finished reading the April '51 TWS and I knew I must write this or bust! I have been an SF fan for several years and I have always been satisfied to just relax and read the stories in TWS & SS. I also enjoyed just watching the controversies in TRS come and go. But this April '51 TWS was too much. I had to get my say on paper in to you to let you know my opinion of this great mag. and to find out the answers to the questions my curious nature has been asking.

L. Sprague de Camp started me going in his story "The Continent Makers". His stories about this particular period of future time are famous. In this story he refers to the Krishnans as a vegetable form of life. This confuses me. In another story about these same Krishnans, in a (if you will pardon the expression) competitor SF mag, he goes through a whole four-part and four-month serial based around the fact that Krishnans are hatched out of eggs and therefore have no navels. Now he says they are animated vegetables. What is going on? Did you ever hear of a vegetable hatched from an egg?!

Otherwise de Camp was his humorous, wonderful self. I liked the sarcasm he uses in the bit about the Churchillian Society and George Bernard Shaw. It is a replica of what we are doing today to William Shakespeare. I wonder what they would say about poor Willie in the time of the Churchillian Society. Probably that George Washington, Ben Franklin wrote "Hamlet" and others. As a whole "The Continent Makers" was very good and I classify it as double A reading enjoyment.

Margaret St. Clair surprised me completely. She should take a rest! The "Replaced" left me completely cold, but completely.

The "Void Beyond" by Robert Moore Williams was a good story with a new twist and an old ending. I rate this as very good except for the old boy gets girl ending.

Larrie Sprague had a novel idea in "Wilds Methuselah". There is only one trouble. That is that his scientific conditions would have to be comparatively smaller than Earth. If so the gravity would be comparatively less and therefore the atmosphere would be less dense.

If the Metabolism had time to change, the stature would be less according to the lesser gravity. Also the lung capacity would be greater to compensate for the less dense atmosphere. Therefore the people on this planet would not look very earthlike and there would not be any trouble with Liza. Another flaw is the duplication of the space-ship. No matter how good these people were at copying and reading books it would be impossible for a culture to build a space-ship without the proper theoretical and practical backlog of experience.

Then how in the world did these people expect to reach Earth without the astronaut aboard? How could they fly a space-ship without experience? Of course Mr. Sprague has the right to say anything he wants to. He can make these people earthlike and super thinkers I can't stop him, but I wanted to know the answers to the above paradoxes. I can only say it was good reading and I rate it as excellent for relaxing purposes.

"Overtime" by Mack Reynolds was a nice, neat and tight short story. It had a solid foundation and it made for good, or I should say excellent reading enjoyment.

"I'm a Stranger Myself" by Dallas Ross was a real quickie. An old idea of Mars and Venus fighting over poor unsuspecting Earth condensed into a brief meeting between agents of these two governments on Earth. A nice change of pace. I liked this one.

"The First Long Journey" by Raymond Z. Cellus was another WHA HOPPENED!! I don't get it. It left me colder than the Maritan ice cap.

"Deception" by Matt Lee left me thinking very much. I wondered whether I liked it or not. It started like a satire on modern society and military life. This I liked. The old boy-girl bit got me and the women sacrifices for science I thought was a little corny, but sometimes altogether they make a good story. This is one of those times I still don't know whether I like it or not. But it is worthwhile to read.

As a whole this issue was good. Above your usual high standards in many ways. The only thing I ask is a little more clarity in stories by W & St C. Try huh!—7314 18th Avenue, Brooklyn 4, New York.

P. S. Thanks for the terrific covers in the last two issues.

I am no longer ashamed to be on the street with TWS under my arm, with the cover intact and in place on the front.

Perhaps Mr. de Camp decided vegetables make poor emotion-stirrers among science fiction readers. How about it, Sprague? But we liked his Krishnans as we got 'em in April. As for Sprague, he disagrees on all counts you bring up. Re-read the story if you can bear it. The answers are all present and accounted for. Glad you liked the issue, though, Richard, and thanks for the P. S.

PINHEADS FRONT AND CENTER!

by Private Jackadon Moir

Dear Editor. For a number of years I have been reading, and enjoying your magazine. Few are the gripes I have had and never before have I actually written to complain. However, the April issue brought my one pet peeve to the boiling point and I'm going to let some of it boil over.

When I buy your magazine, I expect to get stories of stff. Right? O.K., what do you do but use 15 1/2 pages count 'em! of the mag to print the letters of a bunch of silly, conceited, stupid pinheads whose interest in TWS stems only from the hope of seeing their names in print.

Don't you think that the true fans deserve to have those pages filled with a good story instead of being wasted? Those of the readers who want to state their theories, however stupid, can join a fanzine club and see their names in print as often as they like and they wouldn't be cluttering up a good mag.

As for the issue, it is excellent. There has been a steady improvement in the quality of the stories lately and I hope it continues.

Guess that's all. Keep up the good work, and for gosh sakes see if you can't get rid of The Reader Speaks or at least revise it quite a bit, say down to one page?—AF 16349702, Sqn 3734 Flt 6445, Lackland AF Base, San Antonio, Texas.

We'll let you reap the whirlwind you seem to have sown, Private Moir. However, for your reassurance, the reader's column has been cut in the last few issues—by just about fifty per cent. Which will have to satisfy you for the nonce as it were.

LISTINGS TO STARBOARD

by Henry Burwell Jr.

Dear Editor: I don't know whether this will reach you in time for the May issue or not (why not give us an approximate closing date for TRS?) but here are the listings anyway.

1. The Continent Makers.
2. Void Beyond.
3. Overtime.

None of the others seem worthy of comment, with the exception of DECEPTION, and I understand there is an editorial iron-clad rule that there must be at least one of this class in each issue. I would like to second the motion by the esteemed Poul Anderson in the April issue, that letters pertaining to certain issues be published the following issue. TRS, averaged over a year, means as much to many of us as the fiction contents, maybe more in certain issues, and the time lag is too long.

Another change that I would like to see is the inclusion of more novels, or at least novelets. The short or short short just doesn't give even the better author the necessary scope to properly develop plot and characterization. I assume in my ignorance that your wordage rates are the same for either class of story, and if this is true, it shouldn't affect your production costs.

I would like to cast my vote solidly behind that of Algis Budrys and Curt Michael's opinion of the future of science-fiction, also per April issue. No better example exists than

[Turn page]

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The contents of TWS have been steadily improving—keep up the good work. Covers? Put Stalin on the covers if it helps you sell more magazines to make more profit to pay better rates to better authors who write better stories and cause more people to buy your mag to make more profit.—459 Sterling Street NE, Atlanta, Georgia.

All right—here's why that lag, all of you. We are writing this in the middle of March for the August issue—the June edition having been closed and sent to the printer almost a month ago—before the April issue was even decently distributed, much less read, thought over and used as fuel for letters to the editor.

Sorry, but the printers insist on this schedule. We'd rather get the answers in faster ourselves but not a chance at present. So just be patient, fellows, will you? We can't help it, honest . . .

ONE-HALF TEASPOON SEX

by Emili A. Thompson

My Dear Sir: The TWS for April '51 on hand, and I'd like to compliment you on giving us a real fine story in the "Continental Makers". With just a small hint of sex and love theme, it is a real S-F tale.

"Milords Methusalah" runs it a close second. It makes one to think that while scientists ponder about the origin of mankind, while the old Bible record hints of former great longevities, the S-F fic. writers may have grasped the problem by sheer intuition. Mankind may have arrived on earth on flight from a small planet, whose swift metabolism and

short span of life made the original Earth people seem immortal. Or vice versa, people from a larger and very slow moving planet might have landed on Earth and become gods in our tribal legends.

Anyhow, the story is extremely interesting, and other such stories would be welcomed by many readers, who tire of just common adventure and love tales, transplanted to the shores of other planets; the same old plot, enlivened with different scenery. It is O.K. for most readers, but the real S-F fans relish such stories as the above mentioned.

Of course, sex or the love-theme, is an integral part of human life, but some of the very best S-F tales use it sparingly, if at all, like a cook uses seasoning.

Of course, your letter dept. is always read by all S-F fans and your esteemed "Frying Pan" is no stepchild either. So here's the best to you.—3963 NE. 9th Ave., Portland 12, Ore.

Thanks, Emili, but the best of what? The amount of sex used in a science fiction story seems to us to depend entirely upon the story itself. But at this stage of world affairs it looks as if the girls are in to stay in just about every field of endeavor—and where you have men and women together sex conflicts are bound to be present. This would seem to hold true on both sides of the so-called Iron Curtain. For which we will rise and cheer whenever asked.

And that winds up the column once again. Well, we'll be around in the September STARTLING next month, as well as in FANTASTIC STORY MAGAZINE for Fall, then back at this stand come October—all in all not an unpleasant circuit to contemplate. *Adios.*

—THE EDITOR.

... WONDER ODDITIES ...

WORRIED would-be home-builders may find their cares eased by inventor George W. Rappleyea's new process—which mixed dehydrated molasses with clay and sand to create a plastic that can build houses for as little as \$150 per room.

ORILON, a new synthetic fiber now produced by DuPont, promises to be a life-saver to firefighters and parachutists. It can resist heat up to 1,500 degrees Fahrenheit.

NEWEST supergiant star is named S Doradus by its Harvard Observatory discoverers, Dr. Harlow Shapley and Mrs. V. M. Nail. S Doradus, is more than a billion miles in diameter, half a million times more luminous than our sun.

DR. Walter Orr Roberts is currently seeking to solve the last remaining mysteries of the sun's spectrum. He believes that every chemical element in Old Sol can be found on Earth.

EXISTENCE of life in adult human brains outside of their bodies had been maintained for as long as a week at a time according to Dr. Mary Jane Hogue of the University of Pennsylvania.

RH blood trouble, cause of previously deadly infantile jaundice, also causes the baby teeth of its victims to turn blue-green. Since it is now generally curable, children with blue-green teeth promise soon to be not uncommon spectacles.

The FRYING PAN



A Commentary on Fandom

WITH increasing frequency of late so-called "pros"—any writer who perpetrates science fiction and receives money for same—have been doing their bit for the fanzines of recent months. Prominent among them have been Dr. David H. Keller, Wilson Tucker (who runs his own excellent fanzine) and a number of others, up to and including Ray Bradbury, Murray Leinster, Bob Heinlein and a number of others.

On the whole this is a practise we approve, not only for its courtesy on the part of the authors involved but because it implies a close mutual and presumably beneficial interest between ardent reader and writer. However, once in awhile, something seems to happen. Hectographs go haywire or mineograph machines develop galloping screwballitis under the earnest fingers of amateur publishers.

The results? Well, here's what happened to veteran pro Arthur J. Burks when he wrote an otherwise sincere and unfunny article for **IMAGINATIVE COLLECTOR**, published by Russell K. Watkins, 203 Wampum Avenue, Louisville 9, Kentucky. The piece in question was entitled *If I Could Live My Life Over!* and was packed with useful information for would-be authors from the experience of a long and prolific career. It proceeded swimmingly until, in the ninth paragraph—

I even had the wild idea, after the war, of staying in the Marines Corps in which I had once held a permanent commission, but the Navy recognized the idea as being wild and I returned to Brooklyn Navy Yard to be ordered to inactive status, mileage

[Turn page]

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guaranteed to Manhattan! I had to return to writing. I resolved that I would never again write for any of the magazines I previously had. I was puffed up with empigj, pmeu fpr tjree artoc;es tjat O cpid sta; ; a bit/ O s½ent most of the next two years in Brazil. . . .

Personally, Arthur, we'd have spent the next ten years there after such a deal—or at any rate seven to outlast the Statute of Limitations.

The Big O

We now turn to a newcomer among fanzines and not in derision. The 'zine in question is the "BIG O", put out by Lee Jacobs and Les and Es Cole, 3040½ Adeline Street, Berkeley 3, California. State the Coles on page 13 of their neophyte, under the heading of DEPARTMENT OF USEFUL INFORMATION—

At various times—throughout history and today, in the teaching profession—it has been given to certain individuals the task of handing down the torch to those who follow. Education and knowledge must *not* be allowed to die, regardless of the more hideous state toward which it seems to be drifting.

When the *Big O* was in its inception, your editors carefully discussed this matter. We felt then, as now, the terrible responsibility of our times. Suppose, we argued, *the catastrophe* did occur. Could we not do something? So, we decided to include, as a regular feature, some item of information which might prove valuable to you, either in your everyday life or in the post-horror world.

Proudly then, but with a trace of sadness, we hand down the torch to you. Carry it well, and see yet that the flame burns, not with its present vigor, but with a much brighter light.

SELECTION: USEFUL INFORMATION, SAPS MAILING, NUMBER 14

The gestation period for the female elephant is twenty-one plus-or-minus months.*

*Source: Oral communication, 1949, prominent San Francisco doctor.

At the moment we have not yet decided exactly how we are going to employ this all-important piece of information—but rest assured that we are certainly going to *try* to put it to pragmatic purpose before our torch runs hopelessly out of lighter fuel. There must be something all of us can do with it. Any suggestions would be welcome—any suggestions at all!

In a world as frivolous and light-minded as this one we should all strive to compensate by maintaining as serious a mien as possible at all times.

—THE EDITOR.

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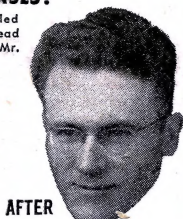
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BEFORE



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WHAT THE GENCO METHOD IS—In short, the Genco method prescribes, according to your scalp condition (see coupon below), the use of one of two complete Kit combinations of exclusive non-greasy, non-irritating, scientifically-controlled "Cleanser & Liquid" and "Cleanser & Ointment" formula. These formulae go to the "roots" of baldness conditions—and when properly applied by the exclusive Genco-below-the-hatband treatment they definitely help stop dandruff, falling hair, receding hair line, and in many authenticated cases Genco-method users have actually regrown hair and regained lost hair.

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CARL M. GENCO Laboratories, 1312 Woodbourne Ave., Pittsburgh 26, Pa.

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☐ Thinning hair ☐ Falling hair ☐ Complete baldness ☐ Oily scalp and hair ☐ Bald patches ☐ Excessive dandruff ☐ Dry scalp and hair ☐ Annoying itchiness

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